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AMERICAN VETERINARY REVIEW

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AMERICAN VETERINARY REVIEW.

AUGUST, 1909.

EDITORIAL.

EUROPEAN CHRONICLES.

PARIS, MAY 15, 1909.

LATENT TUBERCULOUS INFECTION.—A short time ago I related the remarks made by Prof. Vallee upon the very interesting subject of what he calls "Occulte Tuberculosis," and in it I alluded to the discoveries made in that direction by Director S. Arloing. In the *Journal de Zootechnie*, of Lyon, I am just in possession of an article on the subject by the learned doctor, entitled "Documents Upon the Presence of the Bacilli of Koch in the Lymphatic Glands with Absence of Apparent Tuberculous Lesions."

The researches and discoveries of Arloing on this go back several years and he states that, like Joest, C. Noach, C. Liebrecht and Vallee, he has observed the presence of the bacilli, among tuberculous lesions, in lymphatic glands, which were not in connection with the viscera affected and did not present to the naked eye any apparent alteration.

At one time it was believed that tuberculosis of the lymphatic glands was symptomatic of the tuberculization of the organs from which the afferent vessels to the gland were coming. But after numerous and close observations it appeared that tuberculosis of the glands could also be primitive, either because the tuberculous virus was transported directly by the lymphatics or again by the venous circulation into the glands. Indeed, retro-pharyngeal glands were found extensively tuberculous without any apparent

lesion in the adenoid tissue of the fauces, bronchial lymphatic glands were seen much hypertrophied and with calcareous centers and yet the lungs were free from tubercles and again tuberculous glands were found in the center of muscular masses free from disease. Chauveau had also noticed this last and recommended the examination of the principal inter-muscular glands of tuberculous cattle. This frequency of the primitive tuberculosis of the lymphatic glands attracted the attention, specially upon those which were hypertrophied or only swollen and which, however, presented no tuberculous alterations to the naked eye. They were examined under the microscope. Undoubtful lesions were discovered. Not always the classical tubercular follicles, but often simple infiltration of more or less epithelioid cellular elements, or again cellular elements mixed in a finely granular mass, already degenerated and not taking coloring matter. As in many cases, these lesions were obscure, inoculation was resorted to, so as to establish their nature. Reduced into pulp, this was inoculated and tuberculization of the animals experimented with was the result. The conclusion was that lymphatic glands could possess tuberculous virulency without having any trace of microscopic lesions.

* * *

Many are the investigators who, by their researches, have established this scientific fact.

Prof. Loomis, of New York, in 1890 inoculated rabbits with pieces of tracheo-bronchial glands taken on 48 persons free from tuberculosis: 18 rabbits died without results, 8 took tuberculosis. Loomis concludes that man can carry Koch's bacilli in his bronchial lymphatic glands.

Terrile in 1897 obtained similar results.

Pizzini in 1902 inoculated guinea pigs and found the tracheo-bronchial glands virulent in 40 out of 100 cases.

McFadyean and McConway in 1903 inoculated mesenteric lymphatic glands in similar conditions. They found them virulent in the proportion of 25 per cent.

Harbitz of Christiania showed by experimentation that tuberculous virulency exists in 26 per cent. of the cases he examined, and in which pathological anatomy had failed to detect it.

Similar facts have been frequently observed in experimental tuberculosis.

Therefore, besides the latent tuberculosis, that is tuberculous localization, inactive, very limited, there is also a latent tuberculous infection in which the bacilli of Koch do not yet manifest their presence by an alteration perceptible to the naked eye or to the microscope.

Therefore, if the latent tuberculous infection of the lymphatic glands is observed among subjects free from tuberculous lesions, *a fortiori* must it also exist in subjects carriers of more or less extensive lesions.

In finishing his article, Director Arloing after giving his *modus operandi*, relates ten observations which he carried out personally with lymphatic glands, free from tubercular lesions to the naked eye, and resumes nine of them as follows:

Number of animals inoculated, 42; becoming tuberculous, 13; remaining healthy, 29.

Conclusions: 1°—Tuberculous infection may extend beyond macroscopic tuberculous lesions in tuberculous subjects.

2°—Lymphatic glands inclosed in the flesh of cattle and pigs ought to always be held as suspicious.

3°—Consumers will do well to always push aside in their plate glands that they may find in the meat presented to them to eat!

* * *

MIXED TUMORS.—At one of the meetings of the Société de Pathologie Comparee some time ago, Prof. Petit, of Alfort, presented a number of specimens of mixed tumors of the mammæ in dogs, which gave him the opportunity for a kind of clinical review concerning these neoplasms.

They are conjunctive tumors, particularly characterized by the presence of bones and of cartilage in their structure. Prop-

erly speaking, this condition varies considerably and the complete histological diagnosis is rather laborious. Indeed all the tissues of the conjunctive family may be found in them, from the most embryonic to those of adult development. And as a consequence the nomenclature of these neoplasms is as varied as it is complicated; fibro-sarco-chondromas, myxo-chondro-osteomas, osteo-chondromas, etc. These tumors are often cystic; it is because the epithelial tissue of the gland does not remain inactive, but proliferates and gives rise in some parts to more or less growing and cystic adenomatous formations.

Why should these tumors be so frequent in sluts? This is possibly due to the number of mammæ, which then increase their chances for apparition. Yet it must be remembered that inguinal mammæ are the ones most affected. The situation of the organs in sluts expose them to traumatism, but it is not known if that plays any etiological or pathological part in their development.

These tumors may reach very large size and then their surface is always more or less inflamed and ulcerated. Their growth varies, and they may in a few months be twice, three or even ten times as big as when they started. Still at times, when they have reached a certain dimension, they remain at that point. These tumors are benignant in that they do not become generalized. However, Petit has observed several times, in animals having mixed tumors of the mammæ, the presence of sarcomatous pulmonary metastatic centers, without the co-existence of a primitive tegumentary or visceral sarcoma. And as embryonic sarcomatous conjunctive tissue was present in the mammary tumor, it might be possible that by exception generalization might occur. At any rate if malignity is possible under sarcomatous form, the rule for mixed tumors is to remain benignant.

In relation to the pathogeny of these formations, there are two theories. The inclusive and the metaplastic. The first, originated in Germany and to-day accepted all over in that country, considers mixed tumors as kind of embryomas in which, at their origin, peculiar inclusions of tissues (skeletalogenous) would occur. While in the second, that by metaplasia, it is only the for-

mation in the tumors of bones or cartilages corresponding to the simple metaplasia or transformation of the ordinary conjunctive tissue. The mammae indeed contains all that is necessary for the formation of osteo-chondroma. And if proofs of this transformation of development in the conjunctive cells are numerous in the mammae, there are many others very frequent, which result from the same condition, such as the ossification of the inflamed synovial in synovitis and arthritis of horses (ossified wind galls, and thoroughpins); the tendinous and muscular ossifications as the osteomas of the adductor muscles in man and the aponeurotic osteoma of large animals; the ossification of inflamed arteries and those of the aneurismal walls in horses; that of the cardiac clots in endocarditis of cattle; that of the conjunctival envelope of some tumors as in the ossified adenoma of the cœcum of horses; that of the dura mater in ossifying pachymeningitis of dog; the progressive ossification of the pulmonary alveolar walls in entequé of Argentine cattle, etc., etc., and many others that show evidently the possibility of the conjunctive tissue to develop into bone or cartilage. All conjunctive tissues have a common origin, their properties are identical, they transform into one another easily and behave in pathology as they do after all, in the course of the development of the normal organism and metaplasia is sufficient in theory to explain the pathogeny of mixed tumors of the mammae.

* * *

AN IMPORTANT LAW SUIT.—It is not customary to find in our professional journal records of law suits, where the difference of opinions between veterinary experts is brought about, whether as is frequently the case in relation to a question of soundness or unsoundness, or when an action at law is brought for a supposed offense with the laws for the prevention of cruelty to animals. We differ on that with European publications and probably it is better; as after all, that exhibition of professional discrepancies is not likely to be of any advantage to the profession, if it is to one or another individual. But it matters not, and yet it is a pe-

culiar fact that, whether these cases are not common in the United States or whether no one thinks them worthy of record, at any rate they have seldom, if ever, been presented in our pages. Perhaps it is best, for law quarrels are always more or less objectionable. Shall I be excused for presenting the following?

I have found lately in one of our best exchanges, *Veterinary News*, a concise record of a very important case decided a short time ago in the United States and, although it has not been as favorable to some of our friends as they expected, without desiring to appear to be on one side more than on the other, I relate the case as recorded in the *Montreal Daily Star* and as it appears in the *News*.

MONTREAL FARMERS LOSE GREAT SUIT AGAINST SMELTER.

Judgment has just been rendered in Montana in a case of the highest importance, involving not only a claim for some \$2,000,000 damages, but also the fate of the greatest copper smelter on earth. The suit was brought by the farmers of Deer Lodge County, Montana, against the Anaconda Copper Mining and Smelter Company, Dr. D. McEachran, Montreal, had charge of the company's scientific defense. The plaintiffs sought to recover damages and to secure an injunction to prevent the operation of the smelter.

The farmers complained that the smoke from the smelter caused damages to their crops, animals and land. Dr. Duncan McEachran was placed in charge of the scientific investigations necessary to establish the relation of the company to any damage that might be caused in the neighborhood. He began this work in 1905 and on his preliminary report the company based its successful defense. Dr. McEachran associated with himself in this work Prof. Theobald Smith, of Harvard University; Prof. Veranus A. Moore, Director of the New York State Veterinary College, Cornell University; Prof. Leonard Pearson, Dean of the Faculty of Comparative Medicine, Pennsylvania University; and Dr. A. H. Gardner, of Boseman Agricultural College, Montana,

with Dr. Williams Wherry and two assistants in charge of the Bacteriological Laboratory. Besides the above-named gentlemen who had to deal with the questions affecting animals, there were employed chemists, toxicologists, physicists, mining engineers, smelting experts, plant pathologists, botanists, meteorologists and soil experts, stockmen, farmers, butchers and various other experts in different lines.

The investigations by the army of scientists began in June, 1905, and the hearing opened in January, 1906, before Justice Grane, Master-in-Chancery, and continued until March, 1907, one year, two months and eleven days. Two hundred and fifty witnesses were heard in more than three hundred separate examinations. Eight hundred and thirty-five exhibits were placed in evidence, comprising several cartloads of animal, vegetable, photographic and printed matters. It is not surprising, therefore, that the judge who had to render the decision took nearly two years to go over the record and arguments in the case.

It is rumored that an appeal to higher court is to be presented by the farmers of Deer Lodge County!

* * *

CARING WILD ANIMALS IN SICKNESS.—I suppose that things are much changed since the year of 1865 or 1866, when I was fortunate enough to be (thanks to my friend Conklin, then manager) the attending veterinarian of the few sick animals that were now and then found in the zoological garden of the Central Park in New York. It was then if I am not mistaken the only one deserving that name in the United States. Now all the grand cities of America have Central Parks of their own and zoological gardens; and for them the position that I held years ago has considerably changed also, I suppose. To mention but one. No doubt, the name of Prof. W. Reid Blair, veterinary pathologist to the Zoo of New York, is familiar to all of us. Well, zoological gardens have grown, they are to-day in all probability centers of enjoyment for many, and of instruction for a few; and it is certain that they can rivalize with any that exist

anywhere, providing they receive the proper financial support which they need. But I am afraid that the next step which is being realized in the Zoo of London will remain for a while absent from American gardens. Indeed an infirmary for wild animals and birds is being erected, with an operating room, a post-mortem room and an anatomical and pathological laboratory. This hospital will be big enough to receive all kinds of animals, and while there may not be accommodations for elephant, hippopotamus or rhinoceros, yet every other denizen of the gardens may be cared for in the hospital, lions and tigers included. Wild animals are like human beings when they are ill, they need quietness, and the best way for them to escape the attention of sight-seers is to remove them to the hospital. The advantages and necessities for the hospital are considered as follows by the *Morning Post*:

"To a large extent pathologists are ignorant of the diseases of wild animals, even when the pathologists have the great experience of those connected with zoological collections. On the other hand, knowledge on the subject is steadily advancing in spite of the difficulty of handling the creatures and diagnosing the case. The officials at the Zoo are not, however, entirely, without guidance when treating their patients medicinally, for animals most like man, that is the apes, suffer from ailments similar to him. The further the creatures are from human beings in constitution, the less like them are they in disease and the more difficult to treat. Again, however, there is some clue to the course to be followed. Next to man's ailments we know most about those of domestic animals, and so the treatment needed by a sick cat is some guide in dealing with ailing lions, tigers and leopards, which are nothing but big cats. Experience in doctoring dogs is applied to foxes and wolves. Knowledge of the ailments of cattle benefits buffalos, bison, antelopes and wild cattle. The medical treatment of pigs is useful to wild boars and so on. But zoological classification is not everything in dealing with the diseases of wild animals. The rhinoceros and the tapir come under the same category as the horse. the hippopotamus under

that of the pig, while the camel, though a class in himself, is at least a ruminant like many other creatures; but it cannot be said with certainty that any of these wild animals have exactly the same diseases as the domestic representatives of their classes. Indeed, there are few if any cases in which that assertion can be made with confidence."

* * *

TUBERCULOUS LESIONS OF THE TRACHEA.—Veterinarians are, generally speaking, familiar with almost all the lesions that are found in tuberculosis, and except those that one has difficulty to establish in those recently named forms of the disease, the occult tuberculosis, they are readily made out; even if small and difficult to detect. Yet there are some which assume at times a peculiar aspect; and it is to those that a sanitary veterinarian, Mr. Chretien, refers in the article that he has published in *Hygiene de la Viande et du Lait*, under the title of "Peculiar Tuberculous Lesions of the Trachea."

Tracheal lesions are relatively frequent in tuberculosis of bovines. They are observed under the form of isolated or agglomerated ulcerations, interesting the mucous membrane of that organ. They are the final stages of tubercles which have developed in the very thickness of the mucous membrane. They undergo rapidly the caseous degeneration, become softened and ulcerate inside of the trachea, where they form ulcerated surfaces, sometimes granulating, which cicatrize exceptionally. Their situation varies, but most ordinarily they are in the upper part of the trachea, in the region near the larynx, where the lymphatic vessels are very abundant.

But besides these lesions, there are others, which have an altogether special situation. They are found in the conjunctive fibrous tissue included between the sides of the triangular space formed by the two cartilaginous crests of the trachea and the muscle of Reissessen, resting on the mucous membrane. The lesions are found only by a transversal, or better, a longitudinal section of the trachea, interesting the mucus in its superior part and the conjunctive tissue situated between the cartilages.

Microscopically, they present themselves as small nodules, fibrous and varying in size from that of a seed of millet to that of a pear or again being as large as a true abscess with thick walls and containing thick whitish creamy pus.

These lesions are always well defined and do not seem to involve the cartilages nor the muscle. The author has found these lesions in 51 occasions out of 268 cases of tuberculous animals. The microscopic examination of the contents of the abscesses may remain negative, or again the subcutaneous inoculation to guinea pigs may be followed by the specific infection and generalized tuberculosis.

The histological examination of the nodules show that the lesions are more or less fibrous, or casefied or infiltrated with calcareous salts; but without giant cells. It is exclusively located to the intermediate connective tissue between the muscle of Reissessen and the cartilage. There is no tendency to involve the mucous membrane. As to the pathogeny of these lesions, it is explained by the infection of the lymphatic or of microscopic glands, in relation with the bronchial glands which are always affected in those cases.

* * *

GIRKI and GIDDAH are the names given to a disease described in the *Journal of Tropical Veterinary Science* by A. S. Leese, Esq., M. R. C. V. S., in an article on "Two Diseases of Young Camels."

"This affection is found in camel bachas, bred and reared on the Kala Chitta range in Attock district. Girki means knuckling and Giddah deformity. The young camel begins to show girka or knuckling of the fore and hind fetlocks at about six months of age, and unless removed from the stony rakhs, he gets worse and the fetlock joints take an inward bend and soon become quite deformed. At a more advanced stage, the knee joints themselves bend inwards and knock together when the animal walks. There is no marked bony enlargement until the joint begins to bend inwards when an exostosis of a compensatory kind is formed.

Lameness may be absent, slight or again quite severe. The general condition of the animal remains good.

"The cause of this affection is the hard nature of the surface of the range which is covered with loose stones; this is too much for the immature joints of the very young bachas, and they suffer accordingly. The condition is distinct from rachitis.



Two-year-olds reared from birth on stony rakhs. The deformity and the good general condition is well shown.

THE JOURNAL OF TROPICAL VETERINARY SCIENCE, VOL. IV, PART I.

"Prevention.—Although known to local camel men, these conditions rarely occur in camel bachas, because most of the stony rakhs are closed to private camel-grazing, and it is a local practice

at the end of the breeding season to take dachis and young bachas down to the cultivated parts of the country, and as a matter of facts, to take the young animals off the stones when they are very young. When the animal is about one year old, there seems to be little danger of causing deformity. His feet have become hardened and the animal gets accustomed to hill-climbing and hill-grazing, which are important qualities for camels destined for military transport work."

* * *

ASSOCIATION OF LIVE STOCK SANITARY BOARDS.—In the May REVIEW an acknowledgment was made of the publication of the proceedings of the 12th annual meeting of this organization. It was scarcely a sufficient notice, as the report deserves a better one, and although it is nearly ten months since this meeting has taken place, I hope I may be permitted to say a word about it or at least about the transactions that took place.

It is to Doctor C. E. Cotton, of Minneapolis, who is and we hope will remain the Secretary and Treasurer of the Association, that those who desire to read the report of the proceedings must address themselves. Of course, the business of the meeting were of themselves interesting, and during the three days that the convention lasted, the reading of the papers and their discussion with other miscellaneous subjects, there has been but little time to spare. The subjects of the Progress of Tick Eradication was treated by Dr. Tait Butler; that of the Prevention of Hog Cholera by Chief A. D. Melvin; State Meat Inspection by Dr. J. M. Wright; Glanders by Dr. S. W. Ward. The subject of Tuberculosis called for papers from Dr. Luckey on the Federal, State and City Co-operations in the Eradication of Tuberculosis, from Dr. Klein on the Control of Tuberculosis in Pennsylvania, from Dr. Dalrymple on Bovine Tuberculosis in Louisiana and some other Southern States, from Chief Melvin on the Control of Tuberculosis. Doctor J. R. Mohler presented also a report on three diseases of animals which have recently assumed importance to the sanitary veterinarians of the states.

After a series of obituary resolutions, the following were moved and accepted:

1°—In relation to the vaccine of the Board of Animal Industry; that the association, in view of the efficacy of the vaccine as a preventive and control measure, heartily recommend that all state legislatures be requested by their representatives, now assembled, to appropriate sufficient funds, whereby such vaccine may be manufactured and distributed under the direction of the state authorities charged with the control of animal, contagious and infectious diseases of their respective states.

2°—That the Association strongly recommends closing all public watering troughs in and during any outbreaks of glanders, and that hydrants from which teamsters may draw water in private buckets be substituted for the type of watering troughs now in common use.

3°—That the Association urges upon every state the enactment of some provision looking to the immediate eradication of tuberculosis from the herds of its state institutions.

4°—That the action of the Board of Commissioners of the District of Columbia, viz., the promulgation of an order requiring the muzzling for a period of six months of all dogs while at large in the District, be highly commended by this Association with the recommendation that similar action be taken by all sanitary officers in other sections where rabies is known to prevail.

5°—That this Association recommend that the law be modified to allow the shipment interstate of tuberculous cattle to any abattoir at which the United States Department of Agriculture maintains inspection. Shipment to be under such restrictions as the Secretary of Agriculture in his wisdom may determine.

6°—That this Association request that when cattle shipped from one state into another for dairy or breeding purposes are found to be tuberculous upon inspection at destination, that the proper authorities of the state into which the cattle has been shipped be authorized to issue, upon request from the consignor, a permit for the return of said cattle in quarantine to the point of

origin, provided notice of such return is given immediately to the proper authorities of the state to which the cattle are to be returned.

Every veterinarian must hope for the realization of all those wise notions.

The next meeting of the Association will take place in Cheyenne.

* * *

Among the pamphlets that I have received this month, there is one from the Bureau of Animal Industry, "The Score-card System of Dairy Inspection," by M. M. C. B. Lane and G. M. Whitetaker, one from the Department of Agriculture from the State of New York on the Nature and Diagnosis of Rabies and Its Extent in New York, by Director V. A. Moore, and the very interesting report of the State Veterinary College for 1907-1908, as transmitted to the legislature in 1909.

A. L.

THE VETERINARY CONVENTION AT CHICAGO.

In the June issue, the REVIEW dwelt somewhat at length on the advantages of Chicago as a convention city for the A. V. M. A., so that to elaborate further on that aspect of the approaching meeting is useless. Let us rather dwell upon the outlook from the present indications. Two of the most important factors in the success of any convention next to an auspicious place of meeting, are a large attendance and a good program. Of the former, we have every indication, from the national voice of the veterinarian as it is wafted into the REVIEW office from the four points of the compass, eagerly anticipating the "coming meeting of the A. V. M. A." Of the latter we have positive evidence in the form of a communication from Secretary Lyman (which will be found in our correspondence department), em-

bodying a program up to the date of his writing that constitutes in itself an inspiration to be present at the proceedings of the Forty-sixth Annual Convention of the American Veterinary Medical Association, that it will be difficult to resist even by those who have thus far withstood the temptation, feeling that they could not afford the time necessary to attend it. They now, on reading the program, realize that, on the other hand, they cannot afford to miss the opportunity of participating in the deliberations of their national organization, and conclude to "break away" and meet their professional brethren at Chicago. This is a very sane realization and wise conclusion, and where it is possible, should include the wives of veterinarians who are fortunate enough to have them. In concluding our suggestions to those who are planning to attend the Veterinary Convention at Chicago on September 7, 8, 9 and 10, we may be pardoned if we sound a warning against possible error in the dates by misleading stationery of resident state secretaries. This may seem superfluous until we explain, that with but *one exception* all letters that have been received at the REVIEW office from resident state secretaries have borne the *original, discarded dates* set for the A. V. M. A. meeting, and are still coming in that way. Therefore, we repeat, that you cannot be too careful in recording the dates given you in your communications from Secretary Lyman, and as published in the REVIEW. CHICAGO, SEPTEMBER 7, 8, 9 and 10.

AN INNOVATION IN ORGANIZATIONS.

An organization has been formed at Upper Sandusky, Ohio, that surely marks an era in the advancement of comparative and sanitary medicine. "The Ohio Society of Comparative Medicine" is the outgrowth of the efforts and hospitality of Dr. G. W. Cliffe, of that place, who a year ago entertained veterinarians

from all parts of Ohio, together with the physicians from his locality. Sufficient enthusiasm in a common cause was stimulated at that gathering, in physicians and veterinarians alike, to prompt the organization of the above-named society.

When it holds its first annual meeting at Upper Sandusky, August 25th and 26th, it will be unique in that its president is a veterinarian and its vice-president is a physician. Its secretary-treasurer is a veterinarian, giving the veterinarians the majority in its officers.

In its executive board the same condition exists, for, while the chairman is a physician, three of the five members of the board are veterinarians. This amicable commingling of physicians and veterinarians on common ground, and in a common cause, sanitary medicine, is surely a step in the right direction, and much good from it must accrue, as the physician and veterinarian have so much to offer each other.

The result of this exchange of thought and different experiences in the application of the principles of medicine, is manifest in the very attractive program* which they have prepared. Not too extensive, but carefully selected. The REVIEW strongly indorses the movement, commends those that have begun it, predicts excellent results from it, and urges its emulation in other localities.

AMERICAN VETERINARIANS AT THE HAGUE.—Several prominent American veterinarians have already departed for Europe to attend the International Congress at The Hague in September. Others are contemplating going. The *quality* of the men that have already gone from America insures us good representation at the Congress; and we shall look forward to excellent reports of the proceedings, on their return.

* Printed on page 622, this issue.

ORIGINAL ARTICLES.

Indexed.

FEDERAL MEAT INSPECTION AND MUNICIPAL ABATTOIRS.

By G. A. JOHNSON, D. V. M., INSPECTOR BUREAU OF ANIMAL INDUSTRY,
SIOUX CITY, IOWA.

Meat Inspection, in a broad sense of the term, is a very important subject, one that is not only very closely interwoven with the wholesomeness of the meat supply, but also with the live stock industry of the country. For this reason it will be impossible to more than very briefly touch upon some of the more important points of the subject.

Meat inspection is not new, it having been practiced in some form and to a certain extent since the time of Moses, the Jewish law giver; nevertheless, it is doubtful if the masses have ever had a very comprehensive idea of its importance.

When we take into consideration that the per capita consumption of meats in this country is approximately 180 pounds per annum, that it forms approximately 30 per cent. of the total nutritive material, and amounts to about 30 per cent. of the total cost of living, and the fact that our meat-producing animals are subject to diseases, which not only render their flesh unwholesome for food, but which are also capable of being directly transmitted from the lower animals to man through the consumption of the flesh, under certain conditions, it must be agreed that efficient meat inspection is of great sanitary importance.

It has been stated that meat inspection has kept abreast with sanitary science and the knowledge of the etiology of disease, but this may be questioned, for we find that aside from the federal system, meat inspection has, until recently, received but little

official action in this country; and it is an acknowledged fact that the federal inspection law was forced upon us by foreign countries refusing to purchase our surplus meat products because they were not inspected.

As a consequence our federal inspection was at first based upon commercial grounds, solely, but I am happy to state that federal inspection has developed from this crude beginning, until to-day, it is a most comprehensive system based upon scientific principles.

On the other hand, municipal inspection has made but little progress. This may be accounted for, at least in part, first because a meat inspection system can be more easily perfected under federal than under state or municipal governments; second, it can be more economically conducted in large establishments than small ones; third, the necessary money can usually be more easily secured through Congress than through the ordinary state legislature or city council; and fourth, but not least, the states and municipalities have not had the strong commercial spirit to urge them on, as has the federal government; or to put it in another way, they have not been sufficiently "jungleized." Yet any municipality can have efficient meat inspection whenever a majority of its citizens demand it and are willing to pay the expense, provided too many do not demand it at the same time.

The Act of Congress of March 3, 1891, provided for the inspection of live animals and the carcasses at the time of slaughter, but it failed to provide for further supervision of the meats.

This was satisfactory so far as it went, but it soon became evident to those intimately connected with the work that it did not go as far as it should, yet it was not till after the meat scandal, with which you are all familiar, that Congress was induced to pass the law known as "The Act of Congress of June 30, 1906," which empowers federal inspectors to assume supervision not only of the slaughtering, but also of the care, curing and shipping of all edible products, in those establishments operating under federal inspection.

This supervision consists, first, in an ante-mortem inspection of the animals to be slaughtered; second, a macroscopic inspection of all carcasses at the time of slaughter, and third, a close supervision of the curing, processing and marking, of all meats handled in the establishment.

The ante-mortem inspection consists in having all animals destined to establishments operating under federal inspection, inspected by skilled men for evidence of any disease that might render the flesh unwholesome for food; and in case an animal is found to be so diseased it is tagged for identification, and a notice is forwarded to the inspector conducting the post-mortem inspection, giving the reasons for tagging the animal and such other information as may be deemed advisable. Such animals are killed separate from others and are disposed of in accordance with the pathological lesions presented, in connection with the information obtained from the ante-mortem inspection.

The post-mortem inspection consists in making a close macroscopic or digital examination of, first, the lymph glands of the head and throat; second, the viscera and accompanying lymph glands; and third, an examination of the serous membranes, the vertebræ, etc., after the carcass has been split. In case lesions or conditions are discovered that render the carcass or a part thereof unwholesome or unfit for food, it is condemned and destroyed for food purposes.

In this connection it should be understood that a place or retaining room is provided where diseased or abnormal carcasses that cannot be given sufficient inspection on the killing floor are sent for final inspection and disposition.

Thus it will be seen that a very rigid and comprehensive inspection is given all carcasses before they are passed for food. And in order that this work of the Bureau should be done on a scientific basis, the Hon. James Wilson, Secretary of Agriculture, appointed a commission composed of eminent physicians and veterinarians who were not connected with the Bureau, to investigate and advise relative to the disposition of meats affected with

disease or abnormal conditions, and this part of the work of the Bureau is being carried out along the lines laid down by this commission of experts.

However, the work does not end here as formerly, but it is carried on in each department of the establishment by Bureau employees. A meat inspector is placed in the cutting room to see that the work is done in a cleanly manner and to secure and condemn any meats that are allowed to become dirty, or diseased parts that may have escaped detection on the killing floor; other employees are stationed in the pickling and smoking departments to see that the work is done in a cleanly manner, that no deleterious preservatives are used and to inspect the meats being shipped from these departments in order to detect and condemn such as may have undergone deterioration during the curing process; similar supervision is given to the canning and sausage departments to see that the products are handled in a cleanly and sanitary manner, that no spoiled or diseased meats are used, and that all products are branded what they are. To illustrate, pig tongues must not be branded lamb tongues, nor minced meats branded pressed ham, etc.

Strict supervision is exercised over the rendering and refining departments to see that none but clean, sweet, wholesome fats are used, and that the products are properly branded.

The sanitary conditions of the establishment are looked after and it is required that all of the work of handling and caring for the meats and meat food products be done in a cleanly manner by clean workmen, using clean utensils. Proper facilities for the disinfection of the workmen's hands and tools that may become contaminated in the handling or cutting of diseased tissues, and suitable dressing rooms and toilet facilities for the employees are required.

Summarizing, it may be stated that the Bureau maintains a strict supervision over the entire process from the time the live animal is purchased until the finished product leaves the establishment; and when any meat or meat food products at any stage

of preparation, are found to be unwholesome or unfit for food, they are condemned and destroyed for food purposes.

The United States may well be proud of the federal meat inspection service, which has become a vast and comprehensive system based upon modern sanitary science, and enforced by a corps of men appointed through civil service examinations, and supported by the prestige and authority of the federal government.

Under our form of government it is, and probably will remain, impossible for the federal authorities to prescribe that the people of Iowa, or any other state, shall eat none but inspected meats.

On the other hand, the federal government has the authority and does say that meats and meat food products cannot be shipped interstate or exported unless they have been inspected and passed by federal inspectors, except in the case of the farmer slaughtering his own animals.

It is estimated that only one-half to three-fifths of the meats consumed in the United States are slaughtered in establishments operating under federal inspection, thus leaving from two-fifths to one-half of the total to be slaughtered under some other form of inspection, or as is more often the case without inspection of any form.

Hence it will be seen that the federal system does not cover the entire field as the national systems of some Continental European countries do.

Again, a very large per cent. of the meats slaughtered under federal inspection is either exported or consumed in the large cities, consequently the rural districts, villages and small towns must depend largely upon locally slaughtered, uninspected meats.

Another point: At all markets where inspection is maintained, visibly diseased animals are either sold subject to post-mortem inspection or at so low a price as to protect the buyer, which has a tendency to keep such diseased stock away from these markets.

The knowledge of this gives the unscrupulous butcher an opportunity to purchase such animals from the careless or unscrupulous

pulous owner, at a low price, to slaughter them, and feed the diseased parts to hogs, while the remainder of the carcass is taken to the market and sold to his friends and neighbors.

There is little danger of a butcher who carries on this character of business being detected because he has no inspection, and his slaughter house is located in some out of the way place and usually kept in so filthy a condition that no outsider will venture near it unless required to do so.

The larger profits thus obtained furnishes the inducement. Similar action upon the part of the large meat packing concerns was one of the things that made it necessary to establish a federal meat inspection system, and it is a strong reason why we should have state or municipal supervision in connection with the federal inspection.

Again, the percentage of diseased animals slaughtered by the local butcher is usually larger than in animals slaughtered in the larger establishments, because his animals are usually older and are purchased from nearby dairies and farms, and are therefore, more likely to be diseased than are younger or range animals which form a considerable per cent. of the cattle killed in the larger establishments.

Because of these and the fact that many retail butchers keep government inspected meats prominently displayed in their markets, obviously with a view of leading people to believe that they are dealing in inspected meats, while in fact the bulk of the meats they handle are not inspected, really places the people who patronize such dealers under conditions more dangerous than if there were no inspection.

It should be understood, however, that there is no good reason why such conditions should prevail where it is practicable to obtain inspected meats, because there the people can secure the benefits of inspection if they desire it, by purchasing only inspected meats, but there are many places where it is impracticable to secure inspected meats, especially in the fresh state, as beef, mutton and fresh pork.

In view of these conditions and the fact that the federal government is doing all that can reasonably be expected to protect the citizens of every state from the dangers of a contaminated meat supply from without, it would appear that each and every state is under moral obligations not only to itself, but also to the federal government as well as for sanitary reasons to adopt reasonable measures to furnish its people with a clean, wholesome meat supply.

Or to put it in another way, why should the federal government spend large sums of money and condemn large quantities of meats when the public neglects to protect itself locally?

Presumably, it is this phase of the problem that is responsible for our considering the question at this time.

While some action has been taken and some progress made, it is a notorious fact that several other states are in the van of Iowa in sanitary regulations pertaining to live stock, of which meat inspection is one branch.

Again, but few cities of the state have as yet availed themselves of the opportunity to establish municipal inspection under the provisions of our state law.

This leads to the conclusion that a majority of the inhabitants of our cities are not yet sufficiently interested in the subject to demand meat inspection, being content to, perhaps unconsciously, consume more and more diseased meats each succeeding year.

Having thus briefly touched upon some of the principal conditions as they exist in the state, it will be pertinent to briefly consider what can be done to relieve the situation.

While the problem is a difficult one and progress may be slow, I have faith to believe that much can be accomplished and that eventually the problem will be satisfactorily solved.

Judging from the conditions as I see them, I am led to believe that the greatest need of the hour relative to meat inspection is the education of the people to a just appreciation of a sound and wholesome food supply and the dangers attending the

consumption of diseased meats. And who is in a better position to preach this gospel of truth than the physician, and is it not a moral duty that every physician owes to his patrons?

The prevailing thought appears to be that we must rely upon municipal inspection for a solution of the problem, but I question if the time is opportune for general municipal meat inspection.

While such a system can be practically operated in cities of 20,000 inhabitants or over, I doubt if it would be practical at this time for every village and town to attempt to maintain a thorough system of meat inspection, even should a majority of the citizens desire it and were willing to pay the expense, which they probably would not be, because it would be impracticable if not impossible to secure a sufficient number of competent men to do the work. And the attempt to enforce an inefficient system by incompetent men will be productive of as much, if not more, harm than good.

While some cities are maintaining municipal inspection and others are considering the proposition, some states have inaugurated state systems of meat inspection and the proposition is being discussed in others.

Of these two systems, that of state inspection or rather supervision, has much to commend it. If properly organized and the principles of civil service followed in appointing inspectors, it would be much more comprehensive and could be made uniform throughout the state, besides having the support and prestige of the stronger centralized power of the state government.

On the other hand, the state systems do not, and probably will not for some time to come, except in certain places, maintain as thorough and rigid inspection as might and ought to be maintained under the municipal system.

Pennsylvania has a very good law pertaining to state supervision. In general their plan contemplates the correction of the sanitary conditions of the slaughter-houses, meat markets, and the general methods of retailers.

While their plan, so far as I am aware, does not contemplate the erection of municipal abattoirs, it does authorize the state meat inspector to pay a certain per cent. of the valuation of tuberculous cattle carcasses that a butcher may report and which, upon inspection, are found to be so badly affected as to render the flesh unfit for food.

This is done on the theory that a butcher is entitled to as much remuneration for a condemned tuberculous carcass that he slaughters as is a farmer whose cattle are condemned on the tuberculin test, besides, it has a strong tendency to prevent such carcasses being sold for food. But this is practical only in those states that recompense owners for tuberculous animals, which Iowa does not at the present.

It is a well-established fact that many of our meat-producing animals are so extensively diseased that their flesh is unfit and dangerous for food, but it is not so generally understood that meats from perfectly healthy animals may through unsanitary handling become just as obnoxious and dangerous as that from diseased animals.

Or to state the proposition in another way, it is a question if the carcass of a healthy animal that is slaughtered in an old, dirty, filthy slaughter-house with old, dirty, and perhaps contaminated tools, without being washed or protected from flies, etc., is not as unwholesome and, perhaps, dangerous as that from diseased animals.

If this proposition is correct, and I believe it is to a greater or less degree, the slaughter-house phase of the problem has not received the attention that its importance demands.

A portion of my duties during the past year has been to investigate the condition of some of the small slaughter-houses in this state, and I wish to state most emphatically that a very large majority of those that I visited were as filthy and unsanitary as could well be imagined.

They were usually located in some out of the way place some distance from town, which, I believe, is required by law, usually

with poor or no drainage. They were frequently without water supply, while in some few instances the water used was derived from a small stream that flowed through the yard and past the slaughter-house.

In other cases the well from which the water supply was derived was situated in the yard where hogs were being fed on the slaughter-house refuse, and in some cases the well was situated outside of the yard so the yard and slaughter-house drained toward it. There are but few well-arranged slaughter-houses and in nearly all instances the uncooked refuse was being fed to swine.

If anyone thinks this overdrawn, let him make an investigation for himself.

If a butcher will permit his slaughter-house to remain in such a condition year after year, what would he do with a tuberculous or otherwise diseased carcass that he might knowingly or unknowingly slaughter?

The fact that many of the local butchers are renters and men of small means makes it impracticable for them to attempt to construct sanitary slaughter-houses. Hence from a sanitary standpoint it would be advisable for each municipality to construct an up-to-date abattoir of sufficient capacity to accommodate the butchers of the town.

There are two general systems of abattoirs, one known as the German and the other as the French. Under the German system the killing is all done in one room, while under the French system each butcher has a separate room or stall.

From a practical standpoint, the German system is preferable, because it is cheaper to build, easier to keep clean, and much better adapted for inspection. Again, in case two, three or more butchers are working at the same time in one room, should either slaughter a diseased animal in the presence of a competitor, he would practically be compelled to put it in the grease tank, whereas if each did his work in a small room separate from and out of view of the others, there would be a much

greater opportunity for removing the diseased parts and using the remainder.

The following suggestions are offered relative to the construction, location, etc., of municipal abattoirs. The building should be constructed of cement; there should be an ample supply of pure water, and good sewer connections should be provided either with the city system or a cess-pool; and provision should be made for cooking the abattoir refuse. This should be done for sanitary reasons; besides, the grease thus obtained will pay a good profit on the extra expense and the cooked product can be utilized with safety by being mixed with other feed for swine or for fertilizer.

The abattoir should be located where the natural drainage is good, if practicable, and near the edge of small places and near or within the boundary of larger places thereby being more convenient. Such a place properly conducted, will not be offensive or in any way prejudicial to the health of the nearby residents.

It would be advisable for the municipality to employ a janitor who would look after the building and assist the butchers in slaughtering. The butcher should pay a reasonable rent or fee, which in most cases would be sufficient to maintain the building and pay interest on the investment.

But should the municipality derive no financial returns from the building, it would be a most profitable investment from a sanitary standpoint. After having acquired the proper building, the municipality should adopt an ordinance forbidding the sale of meats within the municipality except such as had been slaughtered in the municipal abattoir or inspected and passed by federal inspectors. The Iowa State Pure Food Law forbids the use of preservatives and color substances for meats or meat products, and a certain number of inspectors are now employed to look after these matters. The state pure food law should be amended; to include, or better a new law enacted providing for, state meat inspection.

As before intimated, the state system should provide for a general supervision of all phases of the preparation and handling

of meats and meat food products, and be inaugurated as rapidly as the municipalities construct and maintain sanitary abattoirs, and where *practicable*, to establish and maintain efficient inspection.

Neither supervision nor inspection should be undertaken until the municipality has constructed a sanitary abattoir, because it is impossible to get even fair results with the present system of slaughter-houses.

With reference to the term "practicable" as used above, I would consider it practicable to have one or more inspectors, if necessary, at those points where considerable slaughtering is regularly done, but I would not consider it practicable to station an inspector at those small points where only one or two animals are slaughtered per week.

On the other hand, it would be practicable to divide the state into districts and assign a competent inspector to each district, whose duty it should be to enforce proper sanitary regulations relative to the condition of the abattoirs and meat markets, and the handling and preparation of all meats and meat food products.

While the district inspector would not always be present at the time of slaughtering, arrangements should be made with the butchers of the various towns to have the slaughtering done, as far as practicable, on regular days, i. e., those of town A to slaughter on Monday, those of town B on Tuesday, and so on, thereby affording the inspector an opportunity to personally conduct the largest number of post-mortem inspections. During the intervals of the inspector's visits, the janitor could hold any suspicious carcass until the inspector could be called in to pass upon it.

While such a system does not contemplate ideal inspection, it offers the following advantages: sanitary abattoirs and meat markets; clean sanitary methods in handling and preparing meats and meat food products, in connection with more or less post-mortem inspection; and also a sanitary method of disposing of the abattoir refuse.

If carried out along the lines of the federal inspection system, as far as applicable, such a system would, I believe, give reasonable protection to the community and meet with the general approval of honest butchers, because it would remove the suspicion that rests upon their meats.

On the other hand, if it is not deemed advisable to establish a state system of meat inspection, many advantages would follow the maintaining of municipal abattoirs among which may be mentioned: it would afford a sanitary place for slaughtering, a sanitary method of disposing of the abattoir refuse, and if properly located, it would be more or less under the observation of the people living nearby; it would give the butchers of small means the advantage of a sanitary place which he could not afford to construct for himself, and the janitor service would act as a check on nefarious methods.

In considering any proposition of as much importance as a state system of meat inspection, we should not at once expect to accomplish all that is desirable. The plans suggested contemplate a gradual change from existing conditions to a reasonably efficient system as rapidly as the public demands it.

THE **R** you gave me for last year (AMERICAN VETERINARY REVIEW) was fine—in fact, don't see how any progressive practitioner can get along without it. Please find enclosed check for twelve months' refill. Thanking you in advance, I remain
(*John E. Wilkins, Greenville, Tex.*)

PURE MILK WINS VICTORY IN COURT.—The tuberculin test for cattle and the Minneapolis milk ordinance prohibiting the sale of all milk not taken from officially inspected cattle, was held valid by Judge Frank C. Brooks of the district court, who denied the application of several milk dealers for an injunction restraining the city and Dr. P. M. Hall, health commissioner, from destroying their milk.

This is the first decision upholding an ordinance requiring milk to come from herds subjected to the tuberculin test ever entered either in Minneapolis or elsewhere, and is a decisive victory for the health department.—*Minneapolis Journal*.

Indexed.

ROBERT KOCH AND HIS CRITICS AT THE INTERNATIONAL CONGRESS ON TUBERCULOSIS, WASHINGTON, D. C.*

By D. ARTHUR HUGHES, PH.D., D. V. M., INSPECTOR SUBSISTENCE DEPARTMENT, U. S. ARMY, CHICAGO.†

On eight occasions there have assembled International Veterinary Congresses, attended by delegates from many countries, including the United States, and meeting in one city or another of Europe; the last at Buda-Pesth in Hungary, while the next will land. It is not an uncommon thing for veterinarians to confer, meet in the summer of 1909, at The Hague, the capital of Holland. It is not an uncommon thing for veterinarians to confer, thus congressionally, on international scientific topics. Before 1908 the case was different in assemblies of International Congresses on Tuberculosis. In 1901 in London and in 1905 in Paris, we had only a sprinkling of representatives, unorganized, and footless as to purpose. But experience in previous congresses had taught the managements that the liveliest question, exciting hot debate, interesting to all the world, becoming itself, in certain aspects unsettled, was the one of intercommunicability of animal and human tuberculosis. Hence, in the organization of the International Congress on Tuberculosis 1908, the important place of the veterinarian and veterinary work in the control of the disease was recognized by institution of a separate section for hearing of papers and discussion of the question of tuberculosis of animals and its relations to man.

The question of questions at the Washington congress was: What is the relation of animal tuberculosis to the human being? It was the main topic of the central day of the week when the congress was in general session, and it fully occupied the minds of numerous leaders, up till late in the evening preceding the

* An address, given by request, at the Twenty-sixth Annual Meeting of the Illinois State Veterinary Medical Association, Chicago, December 1, 1908.

† The author, by order of the Secretary of War, on recommendation of the Commissary General of the Army, officially represented the Subsistence Department in Section VII. of the Congress.

close of the sessions, the feelings of the congressists not being relieved until a unanimously passed resolution crystallized their judgment on the policy to be adopted in dealing with animal tuberculosis.

The question was precipitated by the presence of Koch at the congress and his willingness to discuss it. Not since 1901, in London, had he addressed an international congress on the subject; that time he astonished the world by his declarations that the chance of tuberculous infection by ingestion of meat or milk contaminated with bovine tubercle bacilli is so slight as to be a negligible quantity, that the rearing of legislation to prevent infection from animals was, therefore, unnecessary. Since that year there has been such a vast quantity of investigation on the question of inter-transmissibility, privately, by state laboratories and by national commissions, including that of Germany, and Koch's London pronouncement has been so searchingly criticised, that some men confidently expected a change of view on his part. They were disappointed.

Koch made statements in Washington, expressing his present position on the question on two separate occasions, and of these occasions I shall now proceed to speak.

I. KOCH'S PRONOUNCEMENT BEFORE THE WHOLE CONGRESS, SEPTEMBER 30, 1908.

By agreement of the central committee a joint session was arranged by section I., that on the pathology of tuberculosis, with section VII., that on tuberculosis of animals and its relation to man, to meet on the afternoon of the middle of the week when the work of the congress was chiefly carried on, for the purpose of threshing out the question of the relation of tuberculosis of animals to that of man with the hope, supposedly, that some general agreement might be reached as a basis of future work of hygienists. Instead of being a session of sections I. and VII., the meeting of September 30 turned out to be a general session of the whole congress, all surging into the large assembly

hall of the New National Museum to see and hear Koch make a public declaration of his present position on animal tuberculosis.

The hall, hung with gay flags of many nations, was thronged with an anxious crowd of workers against the disease. On the stage, this time, were not high officials of our national government, dignified ambassadors and legationers from other lands, bidding welcome to the congressists as at the opening joint session, but the great leaders of thought and investigation against the disease, particularly on the inter-relationship of human and bovine tuberculosis, at least such notables as attended the congress this year. Here were Theobald Smith and Ravenel, our American leaders; Adami, of Montreal; Sims Woodhead, of the University of Cambridge, he who headed the British Commission on Tuberculosis, and Nathan Raw, of the University of Liverpool; Arloing, of Lyons; Bang and Fibinger, of Copenhagen, and numerous other noted men, greatest of all his excellency Robert Koch himself. The audience was all thought, all eyes, with intense interest in what was to transpire.

Without further ado I will give the gist of Koch's contentions in 1908 by quoting two paragraphs from his Washington speech.

He said in part:

"The tubercle bacilli of the human type are characterized by the fact that they grow rapidly and abundantly in a thick layer on glycerin serum. They are virulent to guinea pigs, slightly virulent for rabbits, and almost non-virulent to cattle. The tubercle bacilli of the bovine type grow slowly and in a thin layer on glycerin serum, they are of equally high virulence to guinea pigs, rabbits and cattle. *To my knowledge the bacilli of the human type have never been demonstrated in cattle.* The bacilli of the bovine type, on the other hand, can occur in man. They have been found in the cervical lymph glands and the intestinal tract. With few exceptions, however, these bacilli are but slightly virulent for man and remain localized. The few known cases in which the bovine bacilli are said to have produced a general and

fatally progressive tuberculosis in man appear to me not to be above suspicion.

“One point which seems to me of high importance is that in all human beings who succumb to tuberculosis, eleven-twelfths die of consumption, or pulmonary tuberculosis, and only one-twelfth of other forms of the disease. One would have expected, therefore, that those investigators who are interested in establishing the relations between human and bovine tuberculosis would have searched for bacilli of the bovine type preferably in cases of pulmonary tuberculosis. This, however, has not been the case. Evidently animated by the desire to bring together as many cases as possible of bovine tuberculosis in man, they have investigated particularly cases of glandular and intestinal tuberculosis. In spite of the bias under which the researches hitherto have suffered, there yet remains at disposal a sufficient number of investigations of pulmonary tuberculosis to warrant a provisional expression of opinion. The gist of it is, that up to date in no case of pulmonary tuberculosis has the tubercle bacilli of the bovine type been definitely demonstrated. If on further investigation it should be established that pulmonary tuberculosis is produced by the tubercle bacilli of the human type exclusively, then the question will be decided in favor of the view that I have upheld and medical men must direct their attention and regulations for combating tuberculosis by all means primarily against the tubercle bacilli of the human type.”

With several important differences this is practically a reiteration of what he said in London in 1901, and partly repeated in the Nobel lecture in Stockholm in December, 1905. Koch has in nowise essentially changed his position. The German has never denied that bovine tuberculosis may infect man. In 1901 he denied the power of the bovine tubercle bacilli to infect the intestinal tract, except so rarely as to be called nil—nothing. He now admits that both the intestinal tract and the cervical glands of man may be infected by the bovine bacillus, though he throws cold water on enthusiastic statements that this is common. In

1901, he laid stress on his supposition that intestinal tuberculosis in man was very rare, arguing that tuberculosis by ingestion of meat or milk was practically a negligible quantity. He now emphasizes the statement that eleven-twelfths of the tuberculous population die of phthisis pulmonaris and that bovine tubercle bacilli have not been demonstrated in cases of human pulmonary tuberculosis in the expectorate or lung lesions. In 1901, his advice was against what he thought was expensive sanitary legislation aimed at protecting man from tuberculosis of bovine origin. He now makes no such statement and refuses to commit himself.

It must be remembered that what Koch would say was not known by the congress before he made his speech. Yet in the subsequent speeches, that memorable afternoon of September 30, written or extemporaneous, by Arloing, Theobald Smith, Sims Woodhead, Fibinger, Raw, Ravenel, representing France, Great Britain, America, Denmark, only Theobald Smith spoke mildly and hesitatingly in Koch's favor. Smith, however, stated that perhaps half of the cases of cervical and intestinal tuberculosis in children were infections from milk. Arloing stoutly maintained the doctrine of the unity of the tubercle bacillus and the equal danger of the infection from animal to man as from man to man. Sims Woodhead summarized the facts obtained by the Royal British Tuberculosis Commission in its work since 1901, especially the numerous cases of infant intestinal tuberculosis of milk origin found in Great Britain. Fibinger drew attention to the increase of infant intestinal tuberculosis in Germany since 1901, and believed this was due in part to the slacking of sanitary precautions. Ravenel reminded the congress that the German and British Tuberculosis Commissions, and he in America, had demonstrated bovine tubercle bacilli in the lesions of children dead of tuberculosis. He believed it incontrovertible that a fair proportion of children and some adults have shown bovine tubercle bacilli in lesions. He said he felt it would be a great misfortune if the opinion was noised about the country that it was the opinion of the congress that the proportion of human deaths due to the bovine tubercle bacillus was a negligible quantity.

The feeling at the close of the joint session, the afternoon of September 30, was that of dismay and dissatisfaction. Hence:

II. THE CONFERENCE ON THE RELATION BETWEEN HUMAN
AND BOVINE TUBERCULOSIS AT THE NEW WILLARD HOTEL,
WASHINGTON, THE EVENING OF OCTOBER 2, 1908.

By request of Professor Koch, and with the concurrence of the central committee of the congress, a conference of seventy-five leading investigators and sanitarians was held in the New Willard Hotel, Washington, in the form of a smoker for the purpose of coming to some common agreement and basis for future work. In order to bring things to a focus two questions were propounded by Koch. First, is bovine tuberculosis frequent in human beings? Second, whether or not it has been established that bovine tubercle bacilli are frequently expectorated by human sufferers?

The second question was put first and it appeared that search for bovine tubercle bacilli in the lungs and expectorate of human tuberculous patients had been much neglected, though not wholly, Arloing in France and Sims Woodhead in England having made such studies. Koch promised to make a study of this question during the next two years. But, as pointed out by Professor Adami, of Montreal, this investigation will likely be of no consequence, because there is already a general agreement among medical men that most of the tubercular infection of the human being is of human origin. Moreover, that most of human tuberculosis emanates in pulmonary tuberculosis. Koch's work will be of no practical value, as he will probably come to conclusions on which all are at present agreed. Adami also pointed out that all, including Koch, are agreed that a proportion of human deaths is due to bovine tubercle bacilli. He thought that they should urge the eradication of the disease in cattle as a work of economic importance and immediate practical value to human beings as well.

When the discussion of this second question was beginning to smolder, Dr. Herman Biggs, of New York, the chairman of

the conference, proposed the first question—the frequency of bovine tuberculosis in man. The meaning of this question came out more clearly in Koch's putting of it: How often does primary intestinal tuberculosis, or mesenteric gland tuberculosis, occur in children? This query resulted in a hot debate in which Koch, Sims Woodhead, Fibinger, Adami, Calmette, Tendeloo, Eastwood and Pearson participated. Smith, in a previous speech, had admitted the frequency of infant intestinal tuberculosis in America. Woodhead dilated on its relative frequency in Great Britain; Tendeloo its infrequency in Holland. An amusing part of the discussion was at that point where Fibinger, of Denmark, openly corrected Koch and administered him a mild chastisement for quoting from old out-of-date German statistical works to support his announcement that infant intestinal tuberculosis was infrequent in Germany. Professor Fibinger said: "Opinions vary greatly in regard to the frequency of primary intestinal tuberculosis, but the tendency seems to be more and more towards discovering that these cases are much more frequent than they were formerly believed to be. Dr. Koch has quoted a number pathologic anatomists and I will quote the same pathologic anatomists referring to the results that have been published in the last two years, whereas Professor Koch refers to their figures of an older period." Here Professor Fibinger gave a great deal of statistical data from German, English and Danish authors showing a marked increase in the number of cases of primary intestinal tuberculosis occurring in children and reported during the last few years.

Throughout the conference Professor Koch acted like a professor of dogmatic theology. He seemed to be firm in his scientific convictions and proposed to answer objections to his views. Neither the Germans nor the Austrians openly sided with him. His own countrymen remained speechless, colorless. He was in the congress and the conference clearly in the minority. At a late hour of the conference something that had the effect of broadside and looked very like a flank movement was sprung by

Dr. Eastwood of the Royal British Commission for the purpose of sensing the mind of those in council, that the expression of opinion might next day be voiced in a resolution of the congress. He proposed three questions, each to be answered by yes or no. They were:

1. Is the danger of bovine tubercle bacilli to human health so slight as to be practically negligible?
2. Does the consumption of milk containing living bovine tubercle bacilli cause a progressive amount of disease or death in children?
3. Is the obtainment of a milk supply free from bovine tubercle bacilli an object which will materially aid the crusade against tuberculosis?

Unfortunately nothing came of this proposition. Professor Koch refused to commit himself to replies of this sort; which, peradventure, there were an agreement, might be construed to be a resolution of the conference. In this he was twice strongly supported by the Chairman of the Central Committee of the Congress, Dr. Flick, who was present. The conference adjourned; no agreement was reached. The assemblage was apparently a fiasco.

III. THE RESOLUTION OF THE CONGRESS IN GENERAL SESSION, OCTOBER 3, 1908, ON BOVINE TUBERCULOSIS AND ITS PRACTICAL IMPORTANCE TO US IN CHICAGO AND ILLINOIS.

A fiasco the conference was not. The drift of opinion in it had been sensed by the leaders, which was given expression in a resolution read next morning, the last day of the Congress, October 3, 1908, at the joint session of all the sections and approved. That resolution reads: "The utmost efforts should be continued in the struggle against tuberculosis to prevent conveyance from man to man of tuberculous infection as the most important source of the disease. Further, preventive measures must be continued against bovine tuberculosis, and the possibility of the propagation of this to man should be recognized."

Preventive measures must be continued, these are the emphatic words. This resolution compares favorably with resolutions passed in London in 1901, and in Paris in 1905. It requires a continuation of existing sanitary policies of prevention and stands rather for than against their improvement.

The resolution of this congress of the world's authorities on tuberculosis has an important practical bearing on our policies for prevention of the disease in Chicago and Illinois. In my own speech at the congress I strongly emphasized the necessity for precautionary sanitary legislation against animal tuberculosis, pointed out the wide differences between the laws against the disease in the several states, the unwise varieties of policies, and methods whereby harmony could be made out of disharmony. Nevertheless each state is a unit in itself; it has its own sanitary problems to master and must work on its own sanitary policy with fear and trembling. What our present policies are, you know well, their present usefulness or future serviceableness. If I mistake not the meaning of the regulations of the State Board on Tuberculous Cattle and Swine, adopted September 1, 1908, we intend to curb, professionally, the previously uninterrupted spread of the disease among our herds. We intend to stop boldly by state meat inspection rulings the promiscuous sale of carcasses badly infected with tuberculosis in the numerous counties of the state. The improvement of these and other sanitary schemes will require our united action when the hour comes for new legislation, for precautionary sanitary purposes, against tuberculosis and other animal diseases. Let us stand fast in the resolution to further these ends, and having done much, stand together for still more improvement.

THE SILVER ANNIVERSARY OF THE VETERINARY MEDICAL ASSOCIATION OF NEW JERSEY at Atlantic City, July 15 and 16, was a marked success, both in attendance and the character of the program, to say nothing of the unusual social features. A report of it will appear in the next issue of the REVIEW.

THE USE OF TUBERCULIN IN MAN.*

BY DR. H. L. TAYLOR, OF ST. PAUL.

Probably the most interesting thing in the history of tuberculosis was Koch's discovery of the bacillus of tuberculosis in 1882. Few things have interested the scientific world and the world of medicine as much as this discovery of the bacillus, although waited for a long time, and looked for by many investigators, unless it might be the announcement that came eight years later that Prof. Koch had discovered a cure for the disease of tuberculosis, which he had manufactured from the cultures of this bacillus and which he named tuberculin. In 1890 when this message was telegraphed around the globe, men started from every quarter as soon as they found that this remedy could not be secured by ordering it. It was one of the most spectacular things that has ever happened in the history of medicine—that flocking of men from all quarters of the world to Berlin. After going there, and with much trouble, they secured small quantities of this agent and returned to their homes. You all know what happened. The announcement had been forced from Prof. Koch by the German Government, because they were afraid that some one else might announce it sooner.

As we all know, scientific discoveries are usually happened upon by two or three people at the same time. It is not that any one man makes a great discovery, but science has advanced to such a point that this is the logical sequence. In order to secure this, Koch's announcement was made prematurely, before it had been investigated and its qualities known. The result was that many of these men, not scientists, took their tuberculin, returned home and began its use upon all kinds of cases, chiefly upon those that were thoroughly hopeless, with the result that they were hurried to their graves in great numbers.

* Read before the Minnesota State Veterinary Association at St. Paul, January 13, 1909.

The natural reaction followed, and when people found that their expectations were not realized and that this remedy, this cure, this specific for tuberculosis, was not going to cure cases that already had a foot in the grave, they took the opposite standpoint, and there were very few men with the courage of their convictions to continue the use of their remedies or to speak a good word for it. There was plenty of authority for the objections they made.

The advanced cases treated in the hospital at Berlin by Koch and his students came to the post-mortem table and fell into the hands of Prof. Virchow, a name of authority wherever it was heard. Virchow and Koch were never very good friends and you know professional jealousies are hard things to overcome. Virchow claimed that the disease was disseminated by tuberculin, and that it was an exceedingly dangerous remedy, and this coming from such a man as Prof. Virchow, carried much more weight than anything else. The result was that there were very few men who cared to carry on the investigation and use of tuberculin.

You know Prof. Koch explained that it had a specific action upon the living tubercle tissue, that it had no action upon the caseous centers and old tubercular foci, and that its action was entirely limited to the actively growing tubercular tissue. That it caused necrotic action to take place in the periphery of tubercular areas and checked its advance in this way.

Following this course there were fibroid tissue thrown out and tubercular areas which do not communicate with external parts and cannot be thrown off from the body, are incapsulated and cut off from all influence upon it. This explanation accounted for the reaction. You know that when the remedy was first used, Prof. Koch insisted that it was necessary to have a reaction after each injection if the patient was to receive the benefit from the dose. And it was this reaction with the high fever that followed it that was responsible for the acute dissemination of tuberculosis that Virchow found upon the post-mor-

tem table, if his recent tubercles were really a dissemination and not simply the condition we might expect to find in any case of tuberculosis in the latter stages which advances rapidly and in which we would naturally expect to find areas of recent tuberculosis.

Koch gave us his original tuberculin, the tuberculin known as the old tuberculin in 1890. This tuberculin is the one that you use to-day, that we all use in our diagnostic work, both in animals and man. In 1897 he gave us the new tuberculin which he called the tuberculin rest or the percipitate found in the bottom of the tube after the tubercle bacilli were extracted. The scientific world had discovered that the endo-toxins, that is, the toxins found in the bodies of bacilli in different diseases were just as important as toxins produced during their living activities. Tuberculin is really a collection of the toxins produced by the living tubercle bacillus, the toxins that are thrown off during its growth. The culture media is taken, as you know, and filtered and this filtrate which is dried to a certain concentration is tuberculin, and contains some of the more readily soluble endotoxins, possibly because many of the tubercle bacillus have been dead in this for some time before it is filtered, but chiefly the toxins produced by the tubercle bacillus during its life cycle. But the tuberculin he gave us in 1897 contained also the endo-toxins, but not the entire body of the bacillus. In 1901 he gave us his new tuberculin and he proposed that we use the entire body of bacillus. The tubercle bacillus in 1901 was ground up in an agate mortar and this residue was extracted.

This grinding was also done in the tuberculin he gave us in 1897. But the tuberculin of 1901 contains the entire body of the tubercle bacillus. Unfortunately this tubercle bacillus emulsion which he gave us in 1901 was soon discovered to contain living tubercular germs, and the methods of its manufacture had to be considerably changed. The objection, of course, to the use of dead or living tubercle bacillus was that we were introducing into the body organisms that were dangerous. The dead

tubercle bacilli usually, if in any large number, produces an abscess at the point of injection. In addition to all these tuberculins which Koch has given us, and all of these tuberculins contain the same active principle, we have had almost innumerable modifications. Denny gave us one, and Klebs gave us his antiphrthisin and purified tuberculin in which he attempted to remove chemically certain agents from tuberculin. The serious question was, that if he did not remove at the same time the therapeutically active agents, as well as agents causing fever?

Van Ruck in his North Carolina sanatorium, and where he had Klebs associated with him for years, has given us the watery extract of the tuberculin bacillus. This fulfills all of the indications of bacillary therapy without giving us any of the germs themselves, because his preparation is filtered through porcelain before it is used. He also grinds his bacilli in an agate mortar to a very fine state of pulverization and extracts the powder for months before the preparation is finished. It is then standardized and used as a therapeutic agent, but it can also be used as a diagnostic. We do not know the exact method of using it as well as we do that of the old tuberculin for diagnosis.

Of recent years there have been many changes in the views of the profession in regard to the action of the tuberculin, and why it is that we have this reactive fever which comes on after the injection of the dose of tuberculin. Wright, in England, with his investigation of opsonins has shown us that this biological process which is accountable for fever and which does about a certain degree of immunity in the patient that is given tuberculin therapeutically. Unfortunately the immunity that is acquired by the patient is not an absolute immunity against the bacillus. It is a toxin immunity only and while this toxin immunity will control the action of the bacillus and will give a man immunity for a number of months, it is not permanent; but during this time the individual has opportunity, if under proper conditions of taking care of himself, and is put in a position during which time the original powers of the body assert themselves and the

resisting power at this time can get in its best work because the activity of the bacillus of the disease is thoroughly checked during this time. The truth of this immunity and degree of it is shown by the agglutination which takes place in the blood of the person treated by the tuberculin. Wright claims that after an injection of tuberculin we have first a negative phase, then a positive phase, or a fall and rise of the resisting powers. He wants the blood of tubercular patients being treated with tuberculin examined constantly and when this positive phase begins to diminish, when agglutination is not as marked as before, then it is time for the next injection. Theoretically this is a very beautiful demonstration of the immunizing powers of tuberculin and it gives those of us who have long used the remedy a great deal of comfort, since we have been told, that we are doing more harm than good and that we should not be allowed to use this remedy. It is, however, practically impossible to carry out these examinations of opsonins, for if a man has a number of patients he would have to have a large number of assistants to work on the blood, and another unfortunate point is that the technique of this work is not so thoroughly understood but that the very best operators will get variations of 10, 15 and 20 per cent. in examining the same blood.

Of course, when they have an error, they throw it out and make another examination. There are very few people who could afford to hire a bacteriologist and keep him at work during the year or so, that they were trying to overcome this disease, but it does, however, show the fact that there is an immunity which is produced by tuberculin, and which can be demonstrated by laboratory methods. Another thing is production of hypersensitiveness, in which the body sensitized by doses of tuberculin reacts violently to the repetition of same dose, and if the remedy is continued, the doses even very much diminished, a reaction still comes on until this period of hypersensitiveness has been passed over.

There are also other laboratory methods of showing immunity, which I am really not competent to explain, as I do not know very much about them.

The use of tuberculin has now become almost universal, that is in every country and city there are people who are competent to use tuberculin and it is used to a great extent. Personally, I have used it since 1893. In 1890 a friend of mine in Asheville, N. C., went to Berlin and came back with three or four cubic centimeters of Koch's tuberculin and he used it. Even at that time had begun using it in small doses, not following the directions of Koch and his school that it was necessary to produce a reaction. He had seen bad effects and had decided that he would not subject his patients to such unpleasantness. He began using it and avoiding reactions, and it was my privilege to watch his cases and I was so thoroughly convinced after watching it, that I began the use of it in 1893 and have used it ever since. It is used in this way: with very small and gradually increasing doses, avoiding reactions and lengthening the time between doses, watching the cases with a great deal of care, and I feel that I am just as safe in using the tuberculin as I would be with a corps of bacteriologists working after each dose, because after using any remedy for a number of years you become accustomed to it, of course, and feel safe. I feel we can use it with safety, depending on careful clinical control.

In abdominal tuberculosis Koch's original method seems to be the very best. I have seen many cases of abdominal tuberculosis apparently hopeless, that Dr. Boeckman has brought out by the heroic use of tuberculin.

In using it for pulmonary tuberculosis I was very much prejudiced against these reactions, but Dr. Boeckman went at it and did not hesitate to double up his doses, giving it once a week and expecting patients to be in bed three days; but the result has justified the means.

In tuberculous conditions that are so frequently found in the eye, it has also demonstrated its usefulness. Many cases of tubercular keratitis were not suspected before the use of tuber-

culin. Many a man's eyesight has been restored to him by the use of tuberculin in these cases of chronic keratitis, in which reactions are not necessarily to be avoided and not as dangerous as in pulmonary tuberculosis.

In surgical tuberculosis, of course, the surgeon is still the master; and surgical tuberculous lesions can be operated upon when all of the diseased tissue can be taken away. This does not, in my mind, include tuberculosis of the glands of the neck because when the surgical glands are enlarged the bronchial glands are very apt to be enlarged, and the surgeon cannot remove these enlarged glands. Consequently he does a partial operation, and partial operations, as we all know, should be avoided at all times. The use of tuberculin in these chronic gland enlargements has given a great deal of satisfaction, the glands decreasing in size, becoming fibroid and remaining as small knots under the skin. If they recur a second course of tuberculin can be given. In this way the scars are avoided, and I have seen cases operated on six times and in which glands recurred.

In tuberculous glands tuberculin is very much better than the surgeon's knife.

I believe that in cattle tuberculin has been used as a diagnostic agent almost from its inception. I know that in 1896, at an international congress at Berne, it was highly recommended and its accuracy, I believe, is now generally accepted the world over. I presume you have failures in cattle as we have in people, but in the vast majority of cases the diagnostic efficiency of the dose of tuberculin is one of its triumphs. I have used, as I have said, this tuberculin since 1893 and I have been abused for doing so, but at the present time we cannot pick up a medical journal in which encomiums of tuberculin are not readily found. Now that we have overcome the first outbursts against the use of tuberculin completely, the value of tuberculin will be more and more recognized. At the same time it is a dangerous remedy. I do not believe because a remedy is dangerous it should not be used, because we all have to deal with poisons, and the only thing is to thoroughly understand the use of same in order to get the results.

Indexed.

CITY MILK AND MEAT INSPECTION.*

By DR. E. H. NODYNE, FULTON, N. Y.

My purpose to-day is to bring before you the more or less thread-bare subject of tuberculosis in cattle, and what may be accomplished by local health authorities to assist in the suppression of this disease, and consequently lessen the number of its victims in the human family, especially among infants; for it has been conclusively proved in a number of instances that the mortality among children from birth to one year of age can be greatly reduced by furnishing them with milk from healthy cattle and sanitary dairies. You are all familiar with what the federal and state authorities are doing in this direction, but I think you must agree with me when I say that their efforts will never be thoroughly effective until they have the assistance and co-operation of the local boards of health, and through them the education of the dairymen, to the end that they will see it is to their own advantage and financial interests to ascertain the condition of their herds, to remove all diseased animals, and then to keep their herds free from such; and when I say remove in reference to the ordinary dairy cattle, I mean by slaughtering. The Bang method is all right in high-priced registered cattle that will pay by breeding for the necessary time, trouble and expense required, but I do not think it at all practical among grade cows, and neither do I think it should be encouraged. I am going to relate as briefly as possible what our city board of health has done, the methods used and the results so far accomplished as I see it.

In the month of March, 1905, on the recommendation of the board of health, the common council of the city of Fulton created the office of Milk and Meat Inspector, and required that such inspector should be a graduate veterinary surgeon. I was

* Paper read at the annual meeting of the Genesee Valley V. M. A., Rochester, N. Y., January 7, 1909.

appointed to this office, rules and regulations were adopted, looking to the production and vending of wholesome milk and meat in the city.

The first year was devoted to the inspection of dairies, sampling of milk, inspection of slaughter houses, etc. During these inspections I came gradually to realize that tuberculosis was more or less prevalent, and of course when I detected the disease from a physical examination the tuberculin test was required, and from these tests I soon realized that physical examinations were really of little practical value, for many animals showing no evidence of disease on such an examination, would react when tested, and in many cases on post-mortem would prove to be quite badly diseased.

Finally our board in February of last year passed resolutions requiring all cattle furnishing milk to the city to be tuberculin tested.

Now you can imagine what we were up against; opposition sprang up from all quarters, and from various causes. Some of you gentlemen may have read in a certain farm publication articles written by a Dr. Smead in opposition to the use of tuberculin, and owing to this man's connection with the farmers' institute, considerable weight was given his statements that tuberculin was injurious to cattle and its use unnecessary in detecting tuberculosis.

Another cause for opposition was the fact that our board, while requiring the test, did not have any money to pay for it, and this made it necessary for the dairyman to pay for testing his own cattle; at that time we could get no assistance from the state, as there was no money appropriated for that purpose.

Some dairymen complied with the ordinance at once, others refused point blank to comply, while still others wished to wait until after the farmers' institute at Fulton; as this Dr. Smead before mentioned was advertised to speak on "Tuberculosis in Cattle." The board could not well object to this delay and so consented to wait until after the institute before enforcing the

test, except in the case of one milk peddler who owned a large dairy, this man came before the board and flatly refused to have his cattle tested, quoting Dr. Smead as his authority for refusing. His license was promptly revoked, and he as promptly concluded to submit. His herd was tested and proved to be entirely free from tuberculosis. We realized that if we did not do something to offset the Smead doctrine at this institute we would have great difficulty in enforcing the tuberculin test at all, as sentiment among the dairymen would be too strong for us. In the meantime, we carried on an active campaign speaking at Grange meetings and anywhere else where we could get an audience of farmers. Finally we communicated with Dr. Moore, of Cornell, and he very kindly consented to come to Fulton and address the farmers at the institute on this subject.

He came as agreed, and Dr. Kelly, State Veterinarian came with him, and practically the whole afternoon and evening sessions were given up to them, as the farmers were anxious to hear these gentlemen express their views. I wish to say right here that I think those present learned more about tuberculosis in those two sessions than they ever knew before. Dr. Smead, learning that Dr. Moore and Dr. Kelly were to speak at Fulton, did not materialize.

The results obtained in this way were most gratifying, as practically all opposition to the test was withdrawn, and we were enabled to go on with the good work.

Naturally the first tests made were those of herds we had reason to suspect, and in some of these the percentage of diseased animals was very high, but the average of all those tested by me the past year was 21 per cent., and I think this will still be about the percentage among the cattle, still untested in the vicinity of Fulton. For while over 50 per cent. of the herds tested proved to be free from the disease, some of the others were so badly affected as to make the percentage on the whole number pretty high though not near as high as is claimed by some other localities.

The following table will give you some idea of conditions found, but includes only those animals tested by myself, quite a number were tested by other veterinarians and some by the State Department of Agriculture.

Number of cattle tested.....	457
Number of herds tested.....	36
Number of herds free from tuberculosis.....	19
Number of herds diseased.....	17
Number of cattle condemned.....	99
Per cent. diseased.....	21

Of the number condemned, by far the larger part were condemned last winter, and as you know the Department of Agriculture at that time had no money to pay for condemned animals, and our board, of course, could not compel their destruction.

However most of them were killed under inspection and probably two-thirds were passed as fit for market and the meat sold; the balance were destroyed, except in a few instances when the owner refused; milk from these herds was not allowed to be sold for city consumption. However this did not cause the owners any great hardships, as the local creameries, cheese factories and the milk stations shipping milk to New York City stood ready to take the milk without asking any embarrassing questions.

Now as to results obtained. At present our city milk supply is absolutely from none but tuberculin tested animals, except now and then a peddler owing to scarcity of milk at this season has had to take on a new dairy, in such cases if this consists of untested cattle, we require that they be tested within ten days, or that the board of health has the owner's written application for the test to be made by the State Department. In addition, our board has adopted the card system of scoring, requiring a score of 60 per cent. to admit the milk for sale in the city. They also require each dairyman to post in his dairy, a card 10x15 inches, containing the rules and regulations of the board of health governing the milk supply of the city.

Three years ago it was a rare thing to find a dairy that would score above 70, but at present there are very few scoring less than that, the larger part scoring nearer 80, a number between 80 and 90, and a few above 90; the highest score is 95. While we have no model dairies producing certified milk, I think our milk supply is above the average in the state, and I believe Fulton is the only city in New York State receiving only milk from tuberculin tested cows. However there are results extending beyond our city limits.

As I before stated, one result is to drive the owners of diseased and suspected cattle to take their milk to the creameries, cheese factories and milk stations. These places are no doubt at present receiving milk from a larger percentage of diseased cattle than ever before, and when they once awaken to the facts, they too will no doubt require closer inspection and accord less weight to the results of a physical examination. Another more favorable result is that our dairymen are becoming more cautious in purchasing cattle, doing so only when the animals pass the tuberculin test.

I believe there should be a law in this state similar to that of two or three other states, requiring all cheese and butter factories that return skimmed milk to the dairymen to first subject such milk to a degree of heat that will destroy the bacteria it may contain 180 to 185° F., as these places are at present a great source of infection.

Now while I realize that we have not a perfect system of milk and dairy inspection, still I think we have accomplished something, and I believe if a few other cities would go at the matter something after this fashion, that it would not be long before others would follow as a matter of self-protection and in this way tuberculosis in cattle would be much sooner stamped out, and many less lives sacrificed as a result of children partaking of infected milk.

As this is a subject in which I am deeply interested, I have taken considerable of your time to-day in the hope of getting

some new ideas from some of you gentlemen who I know have had a much wider experience in this work than myself.

I hope also to learn something on the subject of meat inspection, for I realize as does our board of health that our present system of meat inspection is very defective indeed.

In the first place the salary of the inspector does not allow of his giving sufficient time to meat inspection to make it effective, so long as so much time is necessarily taken up with milk and dairy inspection.

There are slaughter houses scattered all over the country, where they kill from one to ten or twelve animals a week, and while some are kept fairly clean and sanitary, and the owners would not offer for sale any meat that they thought was diseased, there are other places too filthy for description, where owners would not hesitate to sell anything from a beef carcass affected with generalized tuberculosis, to a pig that had died from hog cholera.

Of course the proper solution of this question would be for the city to build a public abattoir, where all animals to be sold for food within the city limits could be slaughtered and inspected at that time; but so far we have been unable to get the necessary appropriation but hope some day in the distant future to accomplish even this.

In the meantime the following rules have been adopted, to take effect the first of next April, in addition to those already in force.

All slaughter houses where animals are killed that are to be offered for sale as food within the limits of the city of Fulton must comply with the following rules and regulations:

First—The floor of killing room must be of cement, properly graded and drained and free from cracks.

Second—There shall be no hog pen within 100 feet of slaughter house.

Third—All hides, bones and litter of all kinds must be removed daily, and not allowed to accumulate in, around or under slaughter house.

Fourth—Drainage must be provided to at least 100 feet from slaughter house.

Fifth—No blood or other body fluids shall be allowed to saturate ground under or around slaughter house.

Sixth—Slaughter houses must be at all times in a sanitary condition satisfactory to the veterinary inspector.

Penalty for violation of these rules shall be \$25 or revoking of peddler's license or both.

CHARBON KILLS MAN.—The first death of a human being as a victim of the dreaded cattle disease, charbon, occurred June 26, when Theophile Eugene, a well-known Frenchman, of Sweet Lake, La., died after having skinned an animal which is supposed to have died from the disease. Eugene is said to have found one of his cows dead near his home at night and proceeded to skin the animal in the morning. In some way the fatal germs got into his system.

THE following clipping from the "Publisher's Desk" column of *The Rural New Yorker* of July 17, 1909, indicates the relationship that is constantly growing more mutual between veterinary medicine and agriculture; and is also characteristic of this wonderful little agricultural paper, that is ever alert to protect its readers and the public generally from fraud:

"A neighbor's son, whose health demands light labor, has an offer from the Ontario Correspondence School of Veterinary Science, London, Canada, to sell books at \$3 each, and memberships. When he has sold these books and memberships they are to start a branch office here with him as head of the office. Do you know this firm? Are they all right, or are they as we suppose—swindlers? They have a branch office at Detroit, Mich.

G. K.

"Yes, we know them. They have worked this game for years. Of course, the branch office proposition is a fake. They make it as an inducement to get the boys to sell the books. Their correspondence course is a dangerous thing at best. Their so-called certificates have no standing in any of the states, and would not entitle anyone to practice veterinary medicine."

ACTINOMYCOSIS.*

BY DR. W. L. MEBANE, BANGOR.

Actinomycosis (akrts ray uvkns fungus) or Ray Fungus Disease is a form of wound infection manifesting itself by the anatomical changes of a suppurating granulomatous inflammation; it may be caused by several varieties of a group of fungi known as the ray fungi or actinomycetes. It occurs not infrequently in man, cattle and swine, and has been exceptionally observed also in sheep, hart and roe deer, dogs, cats and elephants.

The fungi which cause the affection were first discovered by Langenbeck in 1845 in the carious lumbar vertebræ of a man; later by Rivotta in 1868 in tumors of the jaw in cattle and by C. Hahn in 1870 in the tongue in cattle, and have been more fully investigated by Bollinger, Harz, Johne, Israel, Ponfick, Gasperini, Berestnew, Bostrom and others. They have wide distribution in nature existing especially in field soil and the beards of cereals. The usual mode of infection by the ray fungi is through wounds made by small foreign bodies penetrating into the skin or mucous membranes; as sharp spicules of grain or other stiff particles of food to which the fungi are adherent or they may gain access to the tissues through scratches and similar lesions of the skin. Examples of such mode of infection are common. Persons who put heads of grain into their mouths or who accidentally swallow portions of such heads, or who have been injured while harvesting, have been known to develop at the points of injury (gums, throat, hands) actinomycotic abscesses and growths. Swine pastured in stubble land, where their teats are easily wounded by the stiff straw stubble, are not infrequently known to develop actinomycosis of a mammary gland. Cattle frequently show actinomycosis of the tongue, gums, or lips, along with the presence in the tissues of spicules

* Read before the M. V. M. A., April 14, 1909.

of grain or other food materials which have been forcibly lodged in between the teeth in the pharynx, etc. Occasionally in castration the fungi from the straw of the bedding get into the operation wound and set up actinomycosis of the stump of the seminal cord and scrotum (for details of, Schlegel and Kitt). The occurrence of actinomycosis occasioned in some such accidental way (pasturing in stubble fields) has been more frequently observed than an actual epidemic affection (Bang C. O. Jensen Preusse).

Transmission of actinomycosis from one animal to another or to man is very improbable; the few alleged cases of such an occurrence which have been recorded in literature might equally well have been caused by traumatic infection; artificial transmission by inoculation has been successful only in a few cases (Johne, Wolf and Israel, Ponfick and others), and in these the experiment animal had to receive rather deep inoculation with comparatively large amounts of the infectious material (intra-peritoneal subcutaneous injection); while in ordinary wound infection and feeding, transmission failed completely.

The anatomical changes brought about by the actinomycotic infection include the information of actinomycotic nodules, abscesses and fungous granulomatous proliferations, sometimes accompanied by indurative connective tissue proliferations.

The actinomycotic nodules (*actinomycosis nodularis*) are small inflammatory foci of the size of a millet seed to that of a pea, yellowish-red or grayish yellow in color, composed of a soft granulation tissue which is developed as the product of a demarcating inflammation about the fungus which acts as a foreign body; they show one or a number of opaque yellow punctiform spots from the presence in minute foci within them of the yellow-colored clumps of fungi and pus cells. When they are in the parenchyma of an organ, they are surrounded by a connective tissue zone of induration; when on mucus surfaces they break through and project somewhat.

Actinomycotic abscesses (*actinomycosis purulenta apostematosa*) are areas of softening from the size of a plum stone to

that of a human head, with purulent contents, which either appears as a thin, mushy fluid, creamy and of a sulphur yellow color, enclosed in a white indurated abscess wall, or the areas are made up of a flabby grayish-yellow to reddish-yellow matrix, which contains the infiltrating pus; not in separate foci large enough to allow it to be taken out in a spoon, but just as though it were in a fine sponge; in the latter case there is no real abscess membrane present although the surrounding tissue for some distance is converted into an indurated dense white connective tissue.

The fungous actinomycosis growths (actinomycosis fungosa) look like mushrooms or soft cushions, projecting above the surface of the skin or mucus membrane. They are more or less pedunculated growths, varying in size from that of a nut to that of a fist; covered with blood and pus and crusts with an elastic, soft consistence, on section looking like bacon, grayish-white or grayish-red and thickly beset with points of suppuration or the described flabby yellow patches of softening.

All three of these forms may occur together and pass into each other. For example, after rupture of an abscess the granulomatous proliferation springs up and grows out as a fungous mass, or the small nodules, because of the progressive multiplication of the fungi become confluent and form the larger flabby areas of softening; or the bacon-like connective tissue growth prevails and this causes more or less marked induration of the organ.

The most characteristic thing about the actinomycotic growth is the fungus. This may be recognized even by the unaided eye as minute granules the size of a sand grain, soft like tallow or sometimes of a chalky consistence, of a sulphur-yellow color or white; they may often be present in large numbers in the softened areas and the pus from this may sometimes have an almost sand-like gritty consistence. Under the microscope the fungi may be discerned in unstrained preparations as strongly refractive, gray or shining yellow clumps of club-shaped filaments arranged in the form of a rosette (Fungus Glands); in strained

sections the filamentous intricately branched mycelium forming the matrix may be seen and the clump with its budding elements swollen into club shape and growing out from the periphery in radiating fashion. The clumps of fungi are always surrounded by leucocytes in the fatty and granular detritus; sometimes, too, with here and there a giant cell. About this central, softened focus proliferating fibroplastic tissue is formed, vascular and full of emigrated leucocytes, as a zone of varying width.

Actinomycosis is primarily a local affection running a course of months or years in duration. As the fungi penetrate the lymph spaces and are carried to new positions, fresh eruptions in multiple foci of inflammation along the lymph vessels and in the lymph glands arise with purulent softening and coincident production of new tissue in the soft parts and in the bones. By hæmic convection also the process may become a general one. A number of organs, bones, etc., becoming synchronously or one after another involved. [In cattle one of the most common and characteristic results of actinomycotic infection is that seen in involvement of the jaw, which may well illustrate many of the features of the disease. The infection here is supposed to take place by the penetration of a small spicule of grass or beard of grain into the gum along the root of the tooth; such a foreign element having upon it the actinomycotic fungus. In unknown ways the fungus penetrates along the root well into the alveolar process of the jaw, and there produces the small nodules above described, each undergoing central softening and disintegration, and being surrounded by a zone of new tissue formation at its periphery. Gradually the process loosens the teeth; and as they are elevated in their sockets by the inflammatory tissue and chewing becomes painful, the animal stops eating. Sometimes the teeth are forced up so that the animal is unable to close the mouth without pain and the teeth may even be lost. The process gradually spreads throughout the alveolar bone and into and through the whole thickness of the jaw. The inflammatory change about each nodule at first causing absorption of the cal-

careous matter, and thus giving the fungi a chance to spread in this softened tissue. As each nodule grows older the formative tissue at its periphery produces new bone; and from the coincident operation of the two factors of bone destruction and bone formation the jaw becomes enormously enlarged ("Big Jaw"), riddled with the small points of softening representing the different actinomycotic foci and with fistulous paths running all through the mass, connecting these points of disintegration. The jaw may thus have developed within and upon it, a tumor-like mass the size of a double fist or much larger, composed of a coarse framework of newly-formed bone like a coarse calcareous sponge, the meshes of which are occupied by the actinomycotic nodules and their purulent matter. Fistulous sinuses discharge upon the surface and into the mouth; and in the purulent material are to be seen the tiny yellow sand-like grains, known as sulphur grains, consisting of the fungi themselves. The animal may die from starvation, the process may extend along the ramus of the jaw to the base of the skull and gradually advance by the same changes through the latter and cause death from a purulent meningitis; or the fungi may be carried along the lymphatics of the neck to the thorax, producing an actinomycotic pleurisy and entering the lung to cause fibrosis and purulent destruction to these organs. Occasionally the fungi, swallowed with the discharge into the mouth, give rise to alimentary actinomycotic abscesses.]

THE BAYSHORE HORSE SHOW, at Bayshore, L. I., the third week in July, proved a marked success, both in attendance and the quality of exhibits. Evidently the horse has in no way lost his old time faculty of attracting elite audiences.

THE first meeting in the Grand Circuit for 1909 opened at Detroit, Mich., July 26th, with most of the high-class trotters and pacers of the country in top-notch training. This will be one of the most important events of the year, and will continue for five days.

WHAT IS THE NORMAL TEMPERATURE OF CATTLE?

BY E. C. L. MILLER, M. D., DETROIT, MICH.

As is well known, the temperatures of apparently normal cattle vary within unusually wide limits:

Dr. Dinwiddie (1) says, "It varies from 99° F. up to 102.5° F."

Dr. Wm. H. Lowe (2) says, "The normal temperature of the bovine is from 100° F. to 102° F."

For practical purposes it does not matter much what the lower limit of this variation is, but it is important to know the upper limit, as this marks the line between normal and febrile temperatures. This is especially important in the Tuberculin test, as all are agreed that an animal with a febrile temperature should not be tested. The question at once arises, what is a febrile temperature?

Dr. Law (3), speaking of the Tuberculin test, says, "Cattle having a temperature of 103° F. or above are not favorable subjects for the tests except in the case of calves, in which the temperature is normally high."

Dr. Winslow (4) says, "The test (Tuberculin) is unreliable in animals whose temperature reaches 103° F. during the period prior to the injection."

The Royal Prussian Edict of the 29th of October, 1900 (5), states: "Those animals are to be classed as having reacted and, therefore, as probably tuberculous, whose temperature before the injection does *not* exceed 39.5° C. (103.1° F.), and whose temperature after the injection *does* exceed 39.5° C. (103.1° F.), provided there is a difference of, at least, 1° C. (1.8° F.) between the highest temperature before and the highest temperature after the injection. In calves up to 6 months of age, the standard is as above, except that 40° C. (104° F.) is taken instead of 39.5° C. (103.1° F.)."

In Hutyra and Marek's new work (6), which is, perhaps, the best thing ever published on veterinary pathology and therapy, is the following: "All animals more than six months old are to be considered tuberculous:

"(a) Whose highest temperature after the injection exceeds the highest temperature before the injection by 1.5° C. (2.7° F.).

"(b) Whose highest temperature after the injection exceeds 40° C. (104° F.) with a difference of, at least, 0.5° C. (0.9° F.) between the highest temperature before and the highest temperature after the injection.

"(c) Whose highest temperature after the injection exceeds the highest temperature before the injection by 1° C. to 1.4° C. (1.8° F. to 2.5° F.) or, at least, exceeds 39.5° C. (103.1° F.), provided the animals also exhibit an organic reaction.

"(d) In calves under 6 months of age a rise of temperature is not to be considered positive for tuberculosis unless it exceeds 40.5° C. (104.9° F.)."

From these quotations, it appears that in America 103° F. and in Germany 103.1° F. are taken as the dividing lines between normal and febrile temperatures in animals more than 6 months old.

Examining the records of Parke, Davis & Co.'s Biological Stables for several years back, it seemed desirable to tabulate the temperatures there found. All animals used by them for the production of vaccine virus are first subjected to the Tuberculin test. The stables in which they are kept are large and comfortable and there is nothing in their surroundings to cause any disturbance in temperature. In tabulating the temperatures, only such animals were utilized as were subsequently used for the production of vaccine. Animals rejected for any reason were not taken. This was to insure that the temperatures here recorded were of animals at that time considered entirely normal. All the cattle were more than one year old and less than two and one-half years. In the case of animals that successfully passed the Tuberculin test, the records show just two temperatures, viz., the highest before injection and the highest after

injection. The following table shows the highest temperatures before injection and the number of animals exhibiting each temperature.

TABLE.

12 cattle had a maximum temperature of				101.0°	F. before injection.		
16	"	"	"	"	101.2	"	"
18	"	"	"	"	101.4	"	"
130	"	"	"	"	101.6	"	"
200	"	"	"	"	101.8	"	"
402	"	"	"	"	102.0	"	"
265	"	"	"	"	102.2	"	"
379	"	"	"	"	102.4	"	"
298	"	"	"	"	102.6	"	"
185	"	"	"	"	102.8	"	"
266	"	"	"	"	103.0	"	"
190	"	"	"	"	103.2	"	"
36	"	"	"	"	103.4	"	"
2,397	"	had an average max.	"	"	102.395	"	"

The table shows that the temperatures of perfectly healthy cattle, even when kept under favorable conditions, may range up to or even above 103° F. The chart shows distinctly that there is no great falling off in numbers till 103.2° F. is passed. In fact, 20½ per cent. of these cattle have a temperature of 103° F. or above, 39½ per cent. are above 102.5° F., and 64 per cent. have a temperature of 102° F. or above.

These are highest temperatures and, hence, do not adequately represent the average run of temperatures in cattle. They are not greatly out of the way, however, as is shown by the fact that the average of all these temperatures is 102.395° F., while Muir & Ritchie (7) give the average temperature in cattle as 102.2° F.

These records show that in looking on 103° F. as a febrile temperature, we are being rather too conservative, as even 103.2° F. is found in a large number of entirely normal cattle.

1. Proceedings of the Amer. Vete. Med. Association, 1900, p. 231.
2. Special Report of the Diseases of Cattle, from the Bureau of Animal Industry, 1904, p. 88.
3. Text-book of Veterinary Medicine, by Jas. Law, 1902, Vol. 4, p. 463.
4. Veterinary Materia Medica and Therapeutics, by Kenelm Winslow, 3d ed., 1905, p. 748.
5. Lehrbuch der Spec. Path. und Therapie der Haustiere, by Friedberger and Frohner, 6th ed., 1904, Vol. 2, p. 356.
6. Spezielle Path. und Therapie der Haustiere, by Hutyrá and Marek, 2d ed., 1909, Vol. 1, p.
7. Manual of Bacteriology, by Muir and Ritchie, 4th ed., 1907, p. 259.

OUR ADVANCE; SOME SUGGESTIONS.*

BY F. M. PERRY, HOULTON, MAINE.

Mr. Chairman, Gentlemen: Our society, the Maine Veterinary Medical Association, was organized in 1892, and though now sixteen years old, strange as it may seem to most of us, is even now little known to the people of our state. Searching through the lists of the various societies which are annually printed in the Maine Register, the name of this society does not appear. There are The Improved Order of Red Men, Maine Elks, Anti-Saloon League of Maine, Association of Opticians, Eclectic Medical Society, Maine Osteopathic Association, and many others, but no Maine Veterinary Medical Association appears there. Now this condition of things should no longer remain, and while doubtless the above-mentioned societies are all worthy societies; are all worthy associations, ours is certainly no less so, and it is for the purpose of affording a few suggestions that may help to make us and our organization better known and more appreciated that this humble paper is presented.

If correct in my diagnosis, I should say that our sins, if any, are sins of omission rather than of commission. We have left undone those things which we ought to have done; thus we have been weak in numbers till of late years, when now we number some forty members all told. Twenty years ago there were only two or three qualified men in the whole state. At that time most any man who had "always been around horses" or cattle was called in to give relief or effect cures, and sad to say many of our citizens have not gotten over the habit yet.

About that time the Maine Cattle Commission was organized for the purpose of controlling and eradicating contagious diseases of animals—a commission composed of laymen, bear in mind, with the exception of one veterinarian, the latter of whom

*Presented to the Maine Vet. Med. Assn., at Augusta, Jan. 13, 1909.

presumably had little influence in enacting rules according to scientific principles. How suitable or effective such a commission may have been at that time, it is clearly inadequate now, and its continued existence is not at all flattering to our profession or our association.

According to the rules of the commission only the control and eradication of tuberculosis and glanders is attempted, and that, too, in only a spasmodic way, whatever the reasons therefor may be, while we veterinarians sit in the background or do a little testing, and wait till next year for our pay, and have no voice in the administration of the work.

According to the last census there are in Maine approximately 340,000 head of cattle. How many of them have been tuberculin tested? How many dairies have we inspected? How many hogs have we immunized against cholera? What other states are doing has little bearing upon the question. How often have we been consulted regarding large matters of veterinary sanitation in Maine? Maine herds are alleged to be comparatively free from tuberculosis. How much do we know of the real facts of the situation? Are we justified in resting content until they are practically free from this scourge? Someone has described the up-to-date veterinarian as being in reality a veterinary engineer, which would imply his ability to direct as well as to execute in detail; also, as already touched upon, the irregular practitioner is still abroad in the land, and strange to say finds favor in many parts of our state, due perhaps to the fact that we do not assert ourselves, and make our presence and usefulness felt as we should; also, strange as it may seem, even our agricultural press from time to time takes opportunity to malign and discredit the veterinarian and the tuberculin test; but perhaps enough has been said to express somewhat correctly our present condition, and assuming this to be so, now for the remedy.

In the first place, it is for us to decide whether we are simply doers of odd jobs from day to day, as are plumbers or cobblers, or whether we are professional veterinary engineers capable of controlling and stamping out contagious diseases, conducting dairy

inspection, etc., or doing any veterinary work which our state needs to have done. If of the latter class, then it seems to me that we should present a solid united front as a profession and a society and petition our legislature to abolish the present obviously incapable cattle commission, and in its stead place the most capable veterinarian to be found willing to accept the position, and then give him full power to work to control and eradicate any and all contagious diseases of animals found in our borders.

The legislative committee must be impressed with the importance and necessity of a large appropriation in order for the veterinarian in charge to prosecute the work constantly and with vigor and to adequately pay his assistants; also an act ought to be created to restrict the sale of tuberculin and mallein to qualified veterinarians only. Let every veterinarian provide himself with a list of the names of every dairyman or owner of animals in his district; then he should have his own name on the mailing lists of the United States Department of Agriculture and the various experiment stations; get as many of these circulars and pamphlets as possible bearing upon diseases of animals, dairying and animal husbandry, and mail one each from time to time to those on the home list. Not only start this campaign of education, but keep it up. Many of our clients may not read them at all, but some will, and an increasing number will be won over to having the health of their animals safe-guarded by a scientific man.

It might not be out of place for each sender to provide himself with a rubber stamp, bearing the words, "Compliments of Dr.," for example, and have each piece of literature sent out so stamped. Those members living in dairy districts and in the vicinity of granges should offer their services gratis, as speakers on some veterinary topic at public meetings of that order, though in some such ways as above we might make our influence felt and gain the confidence and respect of the public for our knowledge of the various subjects within our own field. At such meeting would be a grand opportunity to answer

questions and clear up misconceived notions and enlarge acquaintanceship.

The following out of these suggestions offered may not appear to all of you to constitute a remedy that will effect an immediate cure, but, gentlemen, it seems to me that such measures, if faithfully carried out and followed up, would certainly help us in our advance all along the line of veterinary work, broaden the field of our usefulness to the state, bring to the public the real value of the trained man over the empiric, our ability and willingness to serve, and thus earn the resulting confidence and respect and also the responsibilities of public sanitation that are all ours by right, and so make our influence and the influence of this association felt throughout the state.

DR. J. OTIS JACOBS, Resident State Secretary for Nevada of The American Veterinary Medical Association, has opened a new veterinary hospital in Reno, and is enjoying a good practice.

DURING July, Prof. Liautard entertained at his home in Paris Dr. James B. Paige, of Amherst Agricultural College, Dr. W. H. Dalrymple, late president of the A. V. M. A., and one or two other prominent American veterinarians, and speaks of the great amount of pleasure it has afforded him.

JUST as we are closing our forms, we are in receipt of circular No. 1, July, 1909, from Dr. Winfield B. Mack, Veterinarian and Bacteriologist, College of Agriculture, Reno, Nevada, on Glanders. It contains chapters on the history, geographical distribution, cause, symptoms, post-mortem findings, diagnosis, mode of infection, prevention and eradication; and altogether is a valuable addition to the literature on this important subject.

APRIL 1, 1909, the Governor of Nevada appointed Dr. T. F. Richardson, D. V. S., B. S., of Goldfield, Nevada, a graduate of the Washington State Agricultural College at Pullman, Washington, State Veterinarian of Nevada to succeed I. W. O'Rourke, removed. Dr. Richardson has begun a vigorous campaign against infectious diseases that gives promise of much benefit to the live stock interests of the state.

COLIC.*

By WM. DRINKWATER, MONTICELLO, IOWA.

Mr. President and Fellow Members of this Association. With the idea of bringing this subject up for discussion, I offer this paper for consideration.

Colic is known as a painful spasmodic contraction of a portion of the intestine due to the irritation of indigestible food or some substance that is not considered food for horses or cattle.

The pain may be induced by the animal taking a large drink of cold water while in a heated or exhausted condition, or immediately after violent exercise, as the nerves of the stomach and bowels are in sympathy with the system, and those organs are not in a condition to take care of or assimilate a load suddenly forced upon them; or by changes of food, particularly a generous allowance of the same.

Water given immediately after feeding may wash out a part of the food into the bowels before the juices of the stomach have acted on it, and cause irritation, and sometimes impaction.

Exercise immediately after a large feed may disturb the functions of the stomach and bowels and cause flatulence and attempts at vomiting or rupture of the stomach.

Some kinds of grain, particularly corn, that is not well dried out before freezing weather comes on, or barley or oats of poor quality, will not digest and will cause flatulence, diarrhea or enteritis, all accompanied by distinctive symptoms.

Some horses become so subject to colic that they are almost useless to their owners, and are disposed of to others who will have little or no trouble with them owing to a different method of feeding.

Cattle occasionally manifest colic by kicking at their sides and lying down and getting up again quickly, owing to frosted or indigestible food.

* Read before Iowa State Veterinary Medical Association.

The different forms of colic are manifested to us by attempts at vomiting and the regurgitation of small quantities of food when the stomach is the seat of trouble, and sometimes some flatulence of the bowels is apparent, and the animal pawing with the fore feet, and lying down quickly and getting up again quickly. *Spasmodic contractions* of the truly digestive portion of the bowels are manifested by sudden pawing of the fore feet, or kicking toward the affected part with one or the other of the hind feet, and lying down suddenly, and rolling over and back repeatedly, and sometimes, by perspiration breaking out over the body.

When the caecum or colon is impacted, the horse looks from side to side and lies down and stretches out for a while, and may rise partly up and sit on the haunches, the latter being a symptom of inflammation of that part or of hernia of some part near. *Enteritis* is indicated by the horse lying down almost all the time and trying to balance itself on the back, and when it rises, to pawing with a forefoot violently, and trying to strike something in front of it, or get the fore feet into some higher plane, as if it were trying to climb. Sweats bedew the body till the inflamed portion of the bowel becomes mortified, and then the patient becomes quiet, and in a short time death is the result.

A jerking movement of the œsophagus, similar to a hiccough, indicates volvulus, intussusception, hernia or laceration of some part of a bowel.

I have made many post-mortem examinations of cases that did not yield to treatment, and have found rupture of the stomach; once where a simple twist of the duodenum would not allow the contents of the stomach to pass out while it was distended with flatulence, caused by a feed of green corn, which was intended for the hogs.

I have seen two or three cases where the omental coverings of the stomach were ruptured and had slid off that part, and the organ was attached only by the œsophagus and duodenum.

I have met with the omental covering of other parts lying loose among the bowels and sometimes a rupture of the mesen-

tery, allowing a number of feet of the bowels to lie among the other bowels, without any attachments; which I believe was caused by the violent rolling and falling of the patient before relief could be given.

I saw a case last summer where a rupture of the diaphragm allowed the stomach and a large portion of the intestines to slip into the thoracic cavity, and the horse lived about twenty-four hours with it.

I have found two different forms of bowel knot, and once, where a tumor like a hen's egg had formed on the side of the colon, and a part of the bowel had been drawn around it so tightly that passage of feces was impossible.

A case that had my attention for three days died, and upon examination we found an impaction commencing at the ileo caecal valve and extending back four or five feet like a beef sausage.

My theory is that where all the parts remain intact, that is, where none of the foregoing lesions have occurred, that relief ought to be afforded by medicinal or mechanical means, and I use Ol. Lini from a pint to a pint and a half, with one to two ounces of Ol. Terebinthæ for flatulence in stomach or bowels, and if more medicinal treatment is needed, I use Hyposulphite of Soda, three or four ounces, dissolved in hot water and an ounce of Chloral Hydrate dissolved with it or given immediately after.

If flatulence is apparent mostly in the stomach, probably relief would be best given with the stomach tube, but I have had little experience with it.

When the flatulence is most apparent in the bowels, I have used the trocar and canula with success.

For painful spasm of the bowels Chloral Hydrate has given me the most satisfaction, but as it is usually due to some irritant, to get rid of it seems to give the best permanent results by giving Ol. Lini and Turpentine or Eserine Pilocarpine and Strychnine have given the best results.

For impaction Ol. Lini and Terebinthæ, Aloes and Nux Vomica with Ammonium Carbonate and warm water injections and sometimes walking exercises if the patient is otherwise robust.

For Enteritis in horses or cattle, no treatment has ever helped or given any relief, and it is apparent that when the portion of bowel is inflamed that no medicine or any treatment can give relief and it is only when the affected part of the bowel is gangrenous that the patient seems to be relieved.

Occasionally we see symptoms of colic in cattle and a mixture of two oz. Nitrous Ether and one oz. of Aromatic Spirits Ammonia repeated two or three times hourly has given the desired effects without affecting the appetite or digestion.

This paper is based on my own experience, and colic has given me many days and nights of worry, work and study, and when I am told that a horse or cow is having trouble with its water, I prepare myself for an indefinite stay in any time of day or night.

DR. R. T. WHITTLESEY, of Los Angeles, Cal., has been appointed veterinarian for the Los Angeles Aqueduct, which is a \$23,000,000 engineering proposition to bring a river of water three hundred miles from the Sierra Mountains to Los Angeles City.

There are 1,000 head of mules and horses strung along the line, and it is taking close watching to keep glanders from getting a foothold.

His health has been bad for several years, but he thinks roughing it on the deserts and mountains will make a three-year-old of him again.

IN renewing his subscription to March, 1910, Dr. W. A. Ax-ford, of Chester, N. J., says: "I have been a subscriber to the REVIEW since the time it began striving for a foothold among the elbowing thousands and have watched with pleasure its progress, until it stands to-day alone in its class as a veterinary publication. The REVIEW has always been of benefit to me, in my early manhood as well as in my declining years; for I am old now and begin to feel the infirmities of a busy life; but I want to die in harness, die in the shafts and straps, fall as the burden kills me one of the day's mishaps, one of the passing wonders, marking the busy road, a toiler dying in harness, heedless of call or goad."

THE VETERINARIAN AS A SANITARIAN.*

BY NELSON N. LEFLER, BATAVIA, N. Y.

In response to an appeal from our worthy secretary to prepare something for this meeting, I decided on the above as my subject, at the same time feeling that I could hardly do my paper justice, so with your kind indulgence I will endeavor in my humble way to throw a little light, if possible, upon the subject of sanitation, and the relation it bears to the every day life of the veterinarian.

The sciences have declared that sanitation must play an important role in the welfare and preservation of the animal kingdom. For without proper attention along sanitary lines, we, as veterinarians are not doing our whole duty toward the proper protection of the public health.

In scanning the field of the veterinarian we note with pride the great strides which have been made in the last few years, and its broadening out into the field of scientific investigation and research work.

We also note with pride that the veterinarian has become quite a factor as an aid to the health department of our various cities and villages, and in quite a number of instances have been appointed to serve as a member of the board of health of his respective city, rendering invaluable assistance by his wise judgment and in keeping constantly before the public the great necessity of strict adherence to perfect sanitary conditions.

We have read, discussed and talked of antiseptics, disinfectants, antitoxins and last, but by no means least, the great bug-bear Tuberculosis, until we have worn them thread-bare. But little do we hear along the line of Veterinary Sanitation.

How many of us here are true sanitarians? How many of the members of this society realize the great importance of advo-

*Read before Gen. Valley Vet. Med. Ass'n, Rochester, Jan. 7, 1909.

cating as much as possible, in a professional way, the thorough observance of strict sanitary conditions, particularly as to stables and their immediate surroundings?

In order to be successful veterinarians we must also be thorough sanitarians, never tiring in our efforts to show our clients whereby they can improve on the sanitary conditions of their buildings and their surroundings. In so doing we are not only administering to the needs of our patients, but to the welfare of our clients also. How often are we called to administer to some sick animal which is being kept in a stable, that for unhealthy conditions, one would wonder that any living thing could survive the surroundings. A few of the more common unsanitary conditions we meet with as veterinarians are mostly in underground stables, where the floor has been laid upon the ground, allowing all the liquids to work upwards through the cracks, thereby producing a veritable hot-bed for disease-breeding bacteria. Another condition often met with, particularly in the country district, is allowing pools of sewage to accumulate in the yards and paddocks from which animals are allowed to drink at will.

The first essential to impress upon our clients is proper drainage of his buildings and yards, more particularly the dairy. Do not be afraid, as the attending veterinarian to a herd of dairy cows, to make such suggestions tending to better sanitation in the stable or milk room, as the case may be. The average farmer or dairyman is an educated man, quick to take good advice, if we will but convince him that it is to his interest, but with some of his shortcomings like traditions have existed for generations before him, and as his attention had never been called to the evil, it had been allowed to go on. It is our duty as veterinarians to advise with our clients and endeavor in every way possible to better his condition by educating him to the grave necessity of strict sanitation in all things.

If you will pardon me for deviating from my subject for a moment, I will just refer to another very important matter necessary for the success of the sanitary veterinarian, and that is ven-

tilation; which goes hand in hand with sanitation. There is no animal so susceptible to foul air as the horse, particularly while suffering from some of the different forms of pulmonary diseases. Some practitioners have wonderful success in the treatment of these diseases, while others have just as successful failures, and in a great majority of cases the success of the former was due to the fact that he insisted and got good, pure air, good careful nursing, together with careful attention to sanitary surroundings and very little medicine, while with the latter practitioner his failure is due mostly to his indifference to the laws of nature as to ventilation and sanitation, too much medicine, poor nursing and in cold weather insufficient clothing.

I thank you very much for your attention, and if by these few lines I have awakened a little interest or have added any suggestions which will prove of benefit, I will feel well satisfied with this little effort.

HE DID NOT BELIEVE IN MICROBES.—The following clipping from the *New York Evening Journal* of July 19, 1909, relates a terrible object lesson to the skeptical victim who refused to be instructed by those who had made a study of a science of which he knew nothing:

"Until very recently a man up at Middletown, New York, had the notion that the germ theory is all nonsense. He hasn't that notion any more, for it killed him.

"The man was Theodore Wright, fifty years old. He lived in a district where the germ of anthrax has been killing cattle. He said it was all nonsense to talk about a germ, and he skinned the cows that had died.

"He was warned to be careful, and especially to keep the fresh hides of the dead cows away from any part of his body that might be scratched and allow the germ to enter.

"To show his great contempt of 'the germ theory,' this unfortunate, ignorant man wrapped one of the fresh hides around his neck and carried it into the barn.

"Through some slight wound in the neck the bacilli or germs of anthrax, invisible to the eye of a man who did not believe in science, got into his blood. His face and throat began to swell shortly, and he was dead in five days, after suffering great agony."

HYOSCINE MORPHINE CACTIN THE MOST DESIRABLE ANESTHETIC FOR DOGS.

. BY D. M. CAMPBELL, TOPEKA, KANSAS.

In the following article "H.M.C." is used for brevity. It refers to a compound of Hyoscine, grain 1/100; Morphine, grain 1/4; and Cactin, grain 1/67. The manufacturers claim that this Hyoscine is made from hyoscyamus, and though chemically identical to pure scopolamine, differs in physiological action. I believe the compound as stated above is the safest anesthetic for dogs.

During the past year and a half I have performed about 70 oophorectomies in bitches under the influence of the H.C.M. anesthetic. There was no fatality among this number, neither during the operation nor subsequently and the anesthesia was in every case (sometimes a very small amount of chloroform was also used) sufficient where at least an hour was allowed to elapse between the giving of the H.M.C. and the beginning of the operation. A mistake I have made a number of times and have known others to make, is that of beginning the operation too soon after giving the anesthetic.

The greatest advantage I have noted from this anesthetic is the quiet it induces after operation. Shortly after a laparotomy under chloroform anesthesia bitches become very restless from the pain following the operation, and very frequently they are much nauseated, and the violent retching during the 36 hours succeeding is extremely undesirable, and in many cases it is the cause of internal hemorrhage. The almost absolute quiet that occurs during the 12 hours succeeding the H.M.C. anesthesia is most desirable and very difficult to secure by other means.

Perhaps one-half of the bitches presented to the veterinarian for spaying are at the beginning of the oestral period. It is the symptoms of approaching heat that determines the owner

to have the work done immediately. Before I knew of the H.M.C. anesthesia I would not operate under these conditions on account of the large amount of chloroform required at this time to produce narcosis, being dangerous to the patient and because of the pain and frequently hemorrhage that followed the operation. With the hypodermic anesthetic I cannot see that the operation is more serious for the patient than it is during the quiescent state of the reproductive organs. In four cases I removed the ovaries and the gravid uterus with no ill effects following.

As to the dosage, I have given H.M.C. in varying amounts. I once gave a full size tablet to a puppy weighing less than 10 pounds, and was called to see her 18 hours later, the owner stating the puppy had almost stopped breathing. Found her in a deep sleep breathing very slowly, but easily awakened. A hypodermic of strychnine and glonoin quickly revived her.

I have found a half size tablet to be all small dogs or fox terriers should have. I now give a full size tablet of H.M.C. for each 25 pounds of weight and usually find it necessary to administer a small amount of chloroform at the beginning of the operation. A much larger dose than this is borne quite well by all breeds to which I have administered it, except fox terriers. I have come near being unable to revive five animals of that breed after administering doses twice as large as the above. In a single case the above dose (one full size tablet to 25 pounds of weight) was insufficient; that was in a large bull dog to which was given $1\frac{1}{2}$ full size tablets with no effect that I could observe other than the initial nauseating. This was not for an oophorectomy.

Within two minutes after injecting the H.M.C. the dog will completely empty its stomach, and usually the retching will continue till some mucus is thrown up. This passes, however, and after five or ten minutes no nausea remains. The anesthesia is not deep, a sharp word or quick movement will arouse the patients often when they are insensible to even the pain resulting from traction on the ovarian ligaments.

STRYCHNINE POISONING.—In strychnine poisoning in dogs I know of no other treatment that will equal a hypodermic of apomorphine hydrochloride ($1/30$ of a grain for a 30-pound dog), followed in ten minutes by a full dose of H.M.C. Dogs treated thus that were unable to stand and in such spasms that medicament could not have been administered by the mouth, were well in half an hour. But on no account should the apomorphine be omitted from this treatment. I have used this treatment in 8 cases of strychnine poisoning in dogs with recovery in each case.

ECLAMPSIA OF SUCKLING BITCHES.—I have used H.M.C. in two cases of eclampsia of suckling bitches. The first was one in which I had prescribed 6-grain doses of chloral in solution every ten minutes. This treatment was persisted in for two hours and the bitch which was a small one, was worse than at the beginning of the treatment. I was called again and administered a full size tablet of H.M.C. The bitch was sound asleep in 30 minutes and continued so for several hours. In the other case a small house dog suffering from a mild attack of eclampsia, was given a half-size tablet and was soon quiet.

THE REVIEW comes every month like a letter from home.
(*J. Harrison, V. S., Dalhart, Tex.*)

IS YOUR MILK WATERED?—A simple and practical test for watered or skimmed milk is credited by the *Scientific American* to Professor Michaud, of the Costa Rica State College. The suspected milk should be diluted with fifty volumes of water—one ounce of milk to two and a half pints of water, or any other convenient measure—well stirred, and then taken with a lighted candle into a darkened room. Now hold an ordinary table glass above the candle flame, and look down through its bottom at the flame while pouring the milk mixture slowly into the tumbler. When the fluid reaches a height at which the flame becomes invisible, measure its depth. If the milk was pure, this should not be greater than one inch. A good milk so diluted will obscure the flame when only seven-eighths of an inch deep.

LITTLE THINGS THAT HELP TO MAKE SUCCESS IN THE PRACTICE OF VETERINARY MEDICINE AND SURGERY.*

BY F. J. NIEMAN, MARSHALLTOWN, IOWA.

I have chosen this subject, partially because of the little required in its preparation, more especially, however, for the lack of time, or a want of opportunity for the profound thought necessary in the preparation and the proper presentation of a deeper and more scientific subject. While I have little to say along this line, I have a desire to show my willingness to perform the duty required of me, as I believe it to be one that devolves upon us all, and should be performed alike by every member of this society, if its meetings are to be of benefit to us professionally. I have made no new invention nor important discoveries in the science of medicine or surgery, neither have I old hobbies to bore you with, or theories that I care to illustrate or discuss but simply want to call your attention to some of the many little things that we so frequently neglect, and so very easily forget in the practice of our profession, while grappling with the larger problems of daily life.

It is the duty of every practitioner to answer his calls promptly, and see that the surroundings of his patient are hygienic, plenty of good bedding, the ventilation good, in fact, all of the little details that go to make the patient comfortable.

A veterinarian may be well versed in all the isms of the category, but if he is not observant and careful in the many little things, he has failed in that important particular, and is not a successful practitioner neither can he long expect to retain the confidence of his patrons.

The doctor may correctly diagnose his case and rightly prescribe for it, but if he only *directs* the number of doses to be

* Read before the Iowa State Vet. Med. Assn.

given in a certain length of time, he has not done his whole duty to that particular patient. To illustrate, if feed and water are to be given see that the water is in a clean pail and comes from a clean tank or well, and that the pail is emptied and rinsed out regularly and fresh water supplied. The hay and grain should have the same consideration.

I have seen poor sick animals compelled to drink from slop pails, the hay had been in the manger for a week or more, all wet and soiled, the feed box contained oats that had actually begun to grow.

I regard as another very important little thing, that the doctor impress upon the mind of the caretaker that a great responsibility rests with him. He should be instructed to be careful and kind to the animal; at least once a day remove the blanket and give the patient a good gentle brushing, the limbs should also receive attention, such as brushing, fresh cotton and the bandages reapplied.

I have always found it to be a good plan to give an honest opinion of the case in hand, not always being too frank, telling the owner that the case was hopeless, but explaining fully the dangers of the situation. In examining your patient you should always observe cleanliness, all instruments and bottles should be clean and sightly, as nearly all people are more or less sensitive about those little things, and especially if you are called to see some family pet, and neglect of these little niceties will leave room for censure and might, in some cases, cause your dismissal.

In your surgery and obstetrical cases great care should be taken to see that your hands and instruments are thoroughly clean and free from disease, both for the good of yourself and patient. The skin of the finger tips should be thin and smooth, as the sense of touch is oft-times as necessary in making a diagnosis as that of either sight or hearing.

Nowhere in the science of medicine or the entire field of cure is there as great a demand for close attention to the little things, as are found in the field of infectious and contagious diseases.

It is the duty of every veterinarian to call diseases by their proper names, isolating the sick from the healthy, and reporting all contagious and suspicious diseases to the proper authorities, so they may be placed in quarantine, thereby following out the rule that will insure the greatest amount of good to the greatest number of people.

The veterinarians' office should be clean and neat, equipped with modern appliances and located on a business street. The doctor should be in accord with his surroundings, keeping pace with the onward march of the profession, thoroughly informed on all methods, showing a personal interest in his business.

He should keep his accounts posted up to date, having his patrons understand that any business done through his office is a matter of dollars and cents and all accounts are due when services are rendered.

There is no profession on earth as slack about collections as the veterinarians of to-day.

THE ALABAMA VETERINARY MEDICAL ASSOCIATION held their second annual meeting at Auburn, July 23 and 24, when an interesting program was gone through with.

DR. S. H. ELLERY, Graduate of Chicago Veterinary College, 1894, died in the Springfield Hospital, Springfield, Mass., June 30, as result of operation for Intestinal Intussusception. He had been in practice since graduation at Palmer Brinfield, and afterwards was located at Greenwich Village, where he also conducted a hotel. He leaves a mother, wife and two small children, and was well-to-do. He was a grandson of Herring the safe manufacturer.

ROOSTER DRAWS A CART.—Judd, a ten-pound Plymouth Rock rooster, owned by Abel R. Woodward, a merchant of Winsted, Conn., has been broken to harness by Woodward's young son, Irving, who hitches the chanticleer to a cart and drives him around as one would a horse.

Judd cannot trot in harness yet, but is a fast walker. The harness consists principally of a breast collar, traces and reins. —*New York World*, Sunday, July 25, 1909.

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

FATAL COLIC, A RESULT OF OBSTRUCTION WITH A LEIOMYOMA.

By A. T. KINSLEY, M. Sc., D. V. S., Pathologist Kansas City Veterinary College.

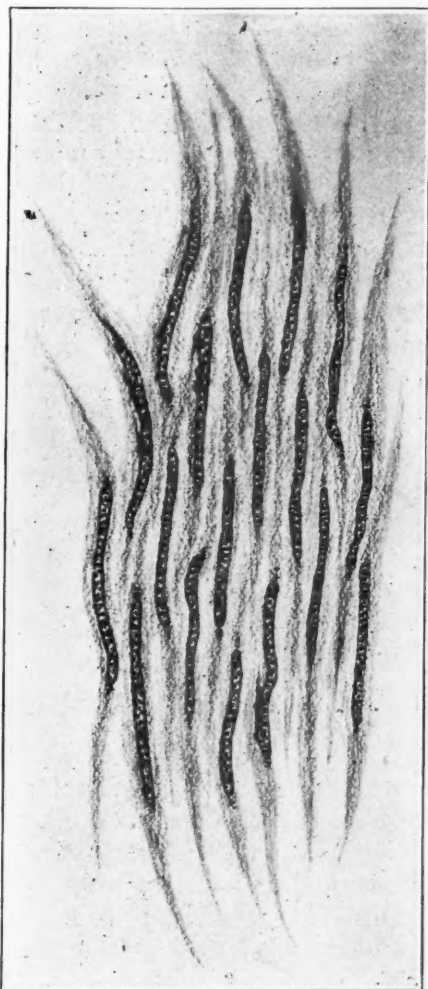
A seven-year-old male mule was taken to a veterinary hospital for treatment. The mule was the property of a farmer and



From a photograph of a section of intestine showing the leiomyoma. The intestine was turned inside out in the above.

had been used almost entirely on the farm, occasionally being driven to town. Early in the morning of the day that the mule was presented for treatment he and his mate were hitched to a

wagon loaded with hogs and driven $3\frac{1}{2}$ miles to town. After the hogs had been unloaded this mule showed some signs of colic and by a careful examination it was determined that the mule was afflicted with impaction colic. He was placed in a comfortable stall and given linseed oil and an anodyne.



Cameralucida drawing of a microscopic section of the intestinal leiomyoma showing the typical fusiform cells with a rod-shaped nucleus.

The symptoms gradually became more pronounced and the mule could not be quieted even by large doses of chloral and cannabis indica, and finally died about 18 hours after he was taken in charge by the veterinarian.

AUTOPSY.—The large colon, especially the second portion of it, contained an excessive quantity of densely packed partially digested food material. About 20 inches anterior to the ileocecal valve two tumor like masses were found. The two tumors were about 3 inches apart and each of them was about the size of a large egg. (See the accompanying illustration.) These tumors were both suspended from the superior or mesenteric portion of the intestine and projecting downward practically occluded the intestinal lumen. They were completely surrounded by a fibrous capsule; were rather dense and cut with a resistance similar to fibrous tissue; in color they appeared very much like involuntary muscle; they had a limited blood supply.

Histologically these tumors were found to be composed of involuntary smooth muscle tissue, with a small amount of supporting fibrous tissue interwoven and were called leiomyomata. Their being circumscribed, and the fact that they were completely encapsulated, was sufficient to differentiate them from hypertrophy of the intestinal muscle.

Several days after the mule died it was learned that he had been subject to colic, having an attack once each month, or even more frequent.

GASTRO-ENTERITIS IN HOGS.

CAUSED BY EATING YOUNG COCKLEBURS (*Xanthium Canadense*).

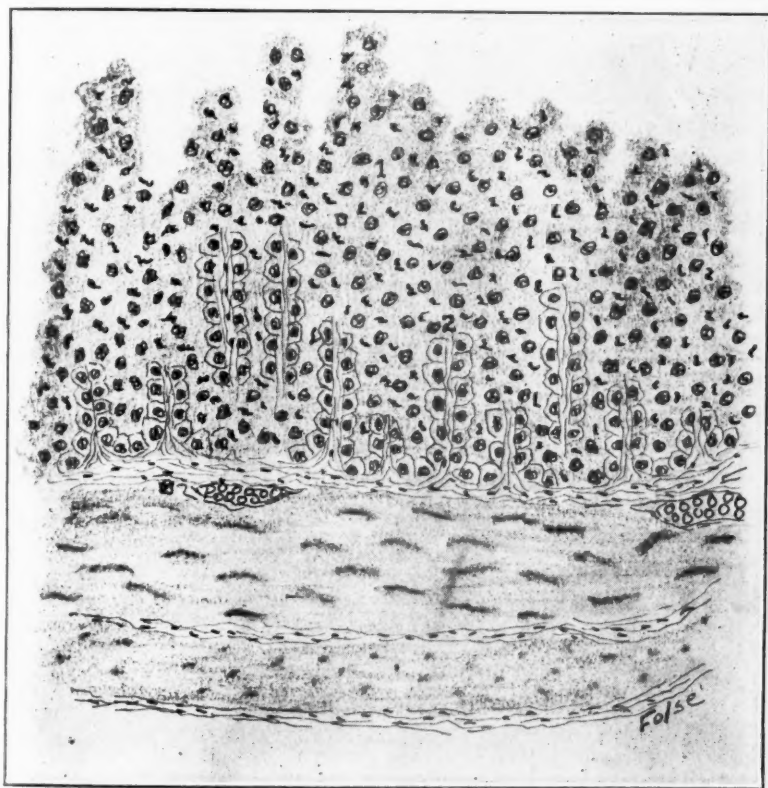
By A. T. KINSLEY, M. Sc., D. V. S., Kansas City, Mo.

On May 20 the superintendent of a large farm in Clay County, Missouri, found seven 6 months' old shoats dead in the pasture. On arriving at the farm the superintendent said he had turned 100 six months' old shoats in a forty acre field two or three days previously. This field had been in alfalfa until June, 1908, when the alfalfa was destroyed by the overflow of the Missouri River. On driving across the field it was found to be covered by cockleburs just coming through the ground. The hogs were noticed to eat the young cockleburs, especially those that had just pushed up through the soil.

The remaining live hogs were driven to the barn and placed in a small pen, where they were inspected to determine, if pos-

sible, whether any others were affected. One was found that appeared dumpish and showed little tendency to move about. It had a normal temperature, and in fact seemed normal in every particular except that it was dull and stupid.

The dead hogs were carted to a pile of stumps, where they could be readily cremated, and a careful post-mortem examination was made of three of them with the following findings: a marked gastro-enteritis involving the entire stomach and small intestine (see cut), and in one the inflammation extended for



Section of gastric mucus membrane of pig, poisoned by the young cocklebur plant X 100.

considerable distance into the large intestine. The liver was hyperæmic in two cases and practically normal in the other. No other lesions were noted.

The inflammation was intense, the entire mucus membrane being involved and in one case it readily sloughed, leaving a de-

nuded surface (this was not the result of post-mortem changes, for the hog had not been dead for more than $1\frac{1}{2}$ hours). The inflammation had the appearance of being caused by some chemical irritant. From the history and post-mortem lesions, the cause of death was given as acute gastro-enteritis caused by eating young cockleburrs.

INTERESTING CASES.*

By W. B. WASHBURN, Tiffin, O.

The subject assigned me by our worthy secretary, in my opinion, is one of the most important that we, the common country practitioners, have to deal with.

We, who have to be able to treat all the domestic and sometimes some wild animals, from the bird to the horse and cow, do surely need the various experiences of our fellow practitioners.

Interesting, and I may say puzzling cases, are occurring every day in the practice of veterinary science which, if reported at these meetings, might possibly be of some benefit to a few of us at least, while to the teachers, to the men engaged in control work, to the bacteriologists or microscopists, the cases that are of interest, or that occasionally occur in the work of the country practitioner, are to them of little value. However, many of us are country practitioners and in a little hamlet like the place where I practice, the subject of "Interesting Cases," as assigned me, might better be styled "The Report of a Few Cases" that were of interest to myself. However, I will not bore you with many of them.

Case No. I. is a continual one of over two years' standing, that of a roan draft mare that came to us two years ago last spring as a four-year-old with an enlargement on the right side of the face over the third and fourth upper molars, about the size of a small hen egg. After having treated it for about two months with the various mercurial ointments and linaments to no avail, she was returned for examination, and we found the thing to be as large as a goose egg. The teeth were examined very carefully as were they the first time we saw her, but they appeared perfectly sound.

* Presented to the Ohio State Vet. Med. Assn., Jan. 12-13, 1909.

We trephined the enlargement in two places, but got only a yellow serous fluid from what appeared to be a perfectly smooth cavity, and she was again sent home.

The wound healed slowly and soon after the whole right side of the face began to enlarge, and she was again returned for examination and treatment.

This time we decided to remove the whole enlargement, which consisted of the entire outside of the superior maxillary bone and up to and into the superior maxillary sinus.

We called a couple of physicians to examine the job after we had finished, and they thought the trouble was now ended.

However, such was not the case, for a few months later when we thought everything was O. K., the head began to discharge as usual a serous fluid mixed a little with pus.

Having come to the conclusion that she had better be in the fertilizer works than in that condition in that section of country, I bought the mare and shortly afterward she began to show some difficulty in breathing. No discharge, however, coming from the nostril.

After veterinary counsel, diseased condition of the turbinated bones was the verdict, and removal of the same recommended.

The operation consisted of two trephine holes into the frontal sinus at the base of the right nasal bone and a third hole in the lower part of the nasal bone. The bone between, consisting of about all of the nasal bone, was then sawed out, the frontal sinus cleaned out and the superior turbinated bone removed.

While at work near the bottom of the wound, my curet came in contact with a bone substance which revolved very readily, and upon examination appeared to be about four inches in diameter. The way we thought best to remove this was to crush it, which we did with a pair of dental forceps, and upon further examination found it to be what I called a bone cyst, the walls of which were fully $\frac{1}{2}$ inch in thickness, and perfectly smooth on both inner and outer surfaces. This cyst contained the same serous-like fluid that had previously come from the head.

The question with me was, what was the cause of this formation? I would like to ask whether any other member ever had a similar case?

But to continue with the mare. This summer she became the worst cribber I ever saw, and after trying about every method and device we could think of, such as sawing between teeth, wedging, hog rings, etc., we cut the tendon of the sternomaxil-

laris muscle and she quit cribbing, and so continued when I traded her off about a month ago.

Case No. II. That of a gray draft stallion used out of season in a coal wagon.

On March 9 last, by some violent exertion in getting a heavy load out of a mudhole, he ruptured a vessel, I presumed, in the head, and bled very profusely from the nose; so much so, that when we got on the ground, he could scarcely stand.

The hemorrhage was stopped by intravenous injection of adrenelin and nasal douches of ergot and iron; stimulants were given, and in about ten hours he was moved two blocks to his stable.

The second day we were called and found right lung filled with blood, all it would stand, and a considerable amount in the left; temperature $104\frac{1}{2}$; and it was all he could do to breathe; pulse according.

This being a good case, we thought, on which to try the nitrox salt preparation, we immediately gave him 2 oz. in the jugular, repeated the same in ten hours, and once a day thereafter for six days. He recovered nicely from the lung trouble in due time, but on or about the fourth or fifth day his penis came down and we were never able to get him to retract it within the sheath.

The various ointments and lotions including bandages were used, but without effect. The electric battery and generator, together with nux vomica to the verge of convulsion, were used, but no results.

We then recommended amputation, but the owner would not consent, and suggested castration instead, which we did on May 11, but this did not better the case.

Having become tired of seeing the horse about in that condition, early in June the owner at last said, "Cut the darned thing off."

Our mode of operating in the case, after we had cast and chloroformed the horse and disinfected the parts, was to pass the catheter and place two ligatures about the penis about two inches apart. From the front ligature we cut in a V shape to the back one, the apex at the rear. The tissue down to the urethra and part way up the side of it having been dissected away, the urethra was split and stitched back to the sides.

The penis was then cut off at the front ligature and parts thoroughly cauterized, done up in tincture of iron and the horse released. In three days the wounds were dressed and every few days thereafter. The horse is now at work every day and sound.

About eighteen inches of the penis was amputated.

What caused the paraphymosis of the penis?

Has anyone a word to say in behalf of nitrox salt?

We imagined great benefit in this case.

Case No. III. A black grade draft mare was brought to our place in early spring in a very much emaciated condition, so much so that her weight was but 1,000 pounds. Owner's statement was that she had been suffering from "The Whites" for about six months. She had been treated by two different practitioners for leucorrhœa and one for continual menstruation, with a last recommendation to breed her. We tried to persuade owner we could tell him nothing about the case without a physical examination of the genito urinary parts, but he insisted that there was nothing wrong but leucorrhœa, and wanted treatment for the same.

As occasionally happens at our place, we had a busy day and gave him treatment for bladder irritation after his description of her frequent to almost continued micturition.

However, the mare came back in about two weeks and examination revealed what I now have with me, found in the bladder. (*Exhibits calculus.*)

After trying with all the instruments I had and could borrow to crush it, but to no avail, we decided to cut for it, which we did by cutting down through the floor of the vagina, making a hole in the fundus of the bladder large enough for the easy removal of the deposit.

The bladder was thoroughly irrigated, then stitched up, which consisted of stitching the vagina and bladder with the same stitch.

A solution of hydrastis and opium was left in the bladder and a drainage tube put in to take away the urine as it accumulated. This tube consisted of a half inch rubber hose, and was held in position by various bandages for five days. Mare appeared to do well and was sold to the shipper in the fall weighing 1,450 pounds.

SCRAPS.*

By H. B. TREMAN, Rockwell City, Iowa.

Having noticed at our previous meetings the interest everyone seemed to take in all new means of restraint or a change in

* Read before the Iowa State Vet. Med. Assn.

the usual technique of an operation, etc., etc., I thought the following would not come amiss. I used always to dread holding or handling the hind feet of a young or unbroken horse, so I devised the following plan:

SCRAP No. 1.—Take a piece of $\frac{5}{8}$ rope with a noose that will not slip in one end large enough to go round the neck near the shoulder, then a half-hitch around the body just back of where the back band of a harness comes, then back through a strap buckled firmly around the roots of the tail, then a ring or a knot is fixed and a small block and tackle runs from it to a hobble on the foot you desire to raise, a ten-year-old boy can do the rest.

SCRAP No. 2.—The first few times I passed the Knisely stomach-tube with a speculum in the horse's mouth I was considerably disgusted, especially so as one horse developed deglutition pneumonia as a result of hard inhalations through the mouth. So I conceived this plan and have used it ever since.

I made a simple head stall like a common halter, except there is no throat latch, and the noose band is quite heavy and arranged so it can be drawn very tight around the nose by means of a common hame strap, this is placed just high enough so as not to interfere with the animal's breathing.

I then lubricate the tube and pass it in through the interdental space and down the oesophagus as usual. The animal breathes much easier and consequently does not resist the operation so strenuously. Besides, the little halter is much more convenient to carry than the heavy speculum. I also think the tube is less liable to enter the trachea than it is with the mouth held open.

SCRAP No. 3.—There is a simple little operation that has caused me some grief and I know of others who have not been very successful with the same. That is sewing up a split ear. They often either fail to unite, or, if the points are slender they may curl over, making the condition much more unsightly than it was to start with, which is quite embarrassing to say the least.

My method may not be new to most of you, but may interest or help some, and as one is seldom called upon to treat one except on a valuable horse, it is essential to at least not make things worse.

I scarify the edges well, then, instead of sewing through the skin and cartilage, as I was taught to do, I put in a row of interrupted sutures, through the skin only, first on one side of the ear, then repeat the operation on the other side. This causes less irritation, better apposition and does not wound the cartilage,

consequently less danger of the slender ear points curling over, and I believe the parts are more likely to grow firmly together.

SCRAP No. 4.—As horses are only supposed to have one set of permanent molars I thought this case somewhat unusual and a report of it interesting.

Two years ago a two-year-old colt was brought to me with the first permanent molar on either side badly decayed. It was necessary to trephine on both sides and repulse the teeth, which I did, and got a nice recovery.

The colt changed hands and a few weeks ago was brought to me to have its teeth examined. You can imagine my surprise to find two quite natural healthy appearing teeth just well through the gums in the places of those I had punched out.

SCRAP No. 5.—On September 29, 1908, I was called to the neighboring town of Jolly to see a bay mare 8 years old, weighing about 1,150 pounds, belonging to a Jewish junk dealer. The mare had been sick since the Saturday before, this being Tuesday. Found the patient lying down, apparently resting; there had been no rolling at any time; temperature 102, respirations nearly normal, pulse about 70 and not very strong.

History was that mare had been in this same condition since the beginning. She would stand up, sometimes for an hour or so at a time, eating hay; she also ate some grain at feeding time. When pain came on would draw up, tramp around a little and lie down and remain quiet for perhaps an hour.

The bowels had been moving nearly normal all the time and the stools were about normal, except a trifle hard. The owner had not seen her urinate, and, of course, was sure it was her water. My diagnosis was some sort of an impaction of the bowels, although it was a little hard to account for so nearly normal bowel movement.

I gave the Reeks treatment and left Amon. Carb. and Nux Vomica, to be given every two hours, with instructions that if there was no improvement next morning to call me up. I heard nothing more till Friday, when they called for me to come.

I found the mare in the same condition, except a trifle more exhausted. This time I made a rectal examination and found an impacted bowel. The exact shape was hard to determine; it was so large I could not reach the end of it. This, together with the fact that the bowels were and had been moving regularly for nearly a week convinced me that it was the caecum that carried the load.

I gave a very high rectal injection, inserted 8 feet of my stomach tube and used eleven buckets of water. Gave $1\frac{1}{2}$ grains of Eserine Sulph. hypodermatically with Amm. Carb. and Nux Vom. In one hour gave .01 Lini, Spts. Amm. Arom. and Turpentine and left Amm. Carb. and Nux to be given every two hours. When I called for a receptacle of some kind to put the Amm. into to leave with him the owner said he still had all the medicine I left the first trip. I very promptly gave him a very emphatic piece of my mind for not giving my medicine and then blaming me for not curing his horse.

The symptoms continued the same all day except for an hour or so after giving the Eserine she was in more pain. But the next morning the old man said there was a whole wheel-barrow load of manure behind the mare; complete recovery followed.

I am fully convinced this was a case of impaction of the caecum. If any of you remember the report of two cases of this kind that I made last year you may recall that the symptoms were very similar to the one up to the point where the caecum ruptured in the two fatal cases.

EIGHT CASES OF PUSTULAR ECZEMA.

By L. H. KRAUS, D. V. S., New York, N. Y.

Eight horses in one stable were more or less affected, two of them very badly and almost bald—all more or less bruised from biting themselves.

Applied once daily for three days very liberally a 1 to 500 Chinosol solution. After first application there was a perceptible decrease of the itching. After the second application, there was very little biting and after the third application, almost entirely free from itching. After a week's use of Chinosol solution, each horse was comfortable and the biting in the meantime ceased entirely. At my last visit, the skin was restored to its normal condition. The hair is growing nicely. The worst of the cases, to which I paid particular attention, after two weeks showed no more signs—the hair having been fully restored. The bitten places healed beautifully.

It is interesting to note that no flies or other insects will molest that part of the horse or dog where Chinosol solution is applied, and the solution can do no harm to the animal because it is not a poisonous substance.

ABSTRACTS FROM EXCHANGES.

ENGLISH REVIEW.

By Prof. A. LIAUTARD, M.D., V.M.

THROMBOSIS OF THE POSTERIOR AORTA AND INTERNAL ILIAC ARTERIES [*J. Craig, N. A. M. R. C. V. S.*].—The subject was a stout bay mare in good condition and about 19 years old. She had never been worked hard and had never had a day of sickness. Since two and a half months she has exhibited symptoms which left no possible doubt as to the diagnosis and she was destroyed. At the post mortem, made immediately, the subserous fat was found in some places to be 2 and 3 inches thick. On examining the condition of the posterior aorta a thrombus was found in the last three inches of the vessel, extending backwards for a distance of six inches into both internal iliac arteries and their subdivisions. Attached to the superior aspect of the vessel, this thrombus was widest at the origin of the two external iliacs and a small projection passed into the lumen of both vessels. The thrombus was smooth on its free surface, slightly cross-striated, firm and of a yellowish brown color. Partial in the aorta, in the internal iliac, the iliaco-femoral, the obturator, lateral sacral and the gluteal, it occupied nearly the whole of the lumen of the vessels. The heart was hypertrophied, weighing over 10 pounds. Two or three small white areas were met within the walls of the left ventricle. The inside was normal. On the aortic semi-lunar valve there were two little hard calcareous nodules, and also on the left coronary. In the posterior aorta were also some small nodules in the course of the vessel. No lesions in the anterior mesentery. No sclerotomata nor worm in the intestines. A phlebolith about 4 inches long existed in the direct colic vein over the first portion of the double colon. It was irregularly cylindrical, very firm, even calcareous and partly colored in yellow and black. It was easily movable in the vessel.—(*Veter. News.*)

INGUINAL HERNIA OF GRAVID UTERUS IN A BITCH [*Prof. Geo. H. Wooddridge, F. R. C. V. S.*].—Toy Yorkshire terrier bitch is pregnant 97 days. She has in the left groin a swelling

which had gradually grown larger. It is quite big and painful. It is a herniated gravid uterus containing a single foetus. Hysterectomy through the hernial sac is to be performed. Anesthesia is obtained with injection of morphia and completed with a few whiffs of chloroform. The operation was rapidly proceeded with, the uterus brought in the hernial sac, ligatures applied and the body being cut through with a scalpel. Both ovaries were removed. The puppy was dead. Sutures were inserted in the hernial ring and the sac cut off. Finally the skin was sutured, the wound well dried with ether and sealed with flexible colodion. After four days a collection of pus had formed which was emptied and dressed with carbolic solution. Chinosol dressings afterwards brought the case to successful issue. The author has already recorded a similar case in which he had obtained also a very rapid recovery.—(*Veter. Journ.*)

AN INTERESTING CASE OF HARE-LIP AND CLEFT PALATE NOT DUE TO IN-BREEDING [*Prof. F. Holday, F. R. C. V. S.*].—These conditions are very often met with in the same patient or may be met with separately. In and in-breeding is generally responsible for the deformity. The author does not believe it to be the cause. In this case "the dam was a toy Yorkshire terrier and the sire a very small Aberdeen; the result of the mating being three tiny puppies, two of which had a well-marked hare-lip and cleft palate, so much so that they could not suck at all and had to be destroyed."—(*Ibidem.*)

USE OF IODINE ON THE SKIN AS AN ANTISEPTIC IN SURGICAL WORK [*Guy Sutton, M. R. C. V. S.*].—In horses and in dogs the author has resorted to it. In twenty cases of paracentesis of the thorax, after coating the walls of the chest with tincture of iodine and with the canula and trocar boiled, clipping of the hairs and washing the parts with soap immediately prior to the puncture, in no case has suppuration taken place. Similar results with similar attention in cases of puncture of the cœcum. In over twenty neurectomies, median, ulnar and plantar, healing by primary union has always followed. In two castrations where the scrotum had been coated over with tincture of iodine previous to the incision, the animals were able to work after two days and suppuration was reduced to the minimum. Large and small dogs were castrated, small superficial tumors were removed, iodine always doing its part good. It does it even in the castration of cats. In suturing eyelids, nostrils, or any small wounds in horses, iodine has not irritated and with it suppuration has

been infrequent. The author is a strong advocate of iodine to obtain asepsis as it is easy to apply, is inexpensive and highly efficient.—(*Ibidem.*)

SARCOMA OF THE TARSUS OF A DOG WITH SECONDARY INFECTION [*J. A. Gilruth, M. R. C. V. S., F. R. S. E., and C. J. Reakes, M. R. C. V. S.*].—St. Bernard dog had a swelling on the right tarsal joint, apparently implicating the tibia above. No history of previous injury, but this is suspected on account of the excessive lameness of the dog. He died. Post mortem showed extensive emphysematous condition of the lungs, heart enlarged, liver congested and the seat of nodules, homogeneous and circumscribed; one is as big as a marble and another the size of a split pea. The kidneys are congested and the seat of punctiform hemorrhagic spots. The bladder was full. Involving the whole right tarsus there was a mass of apparently new growth, fairly dense in consistency, with calcareous points here and there. The lower end of the tibia was involved in the diseased process. Sections of the growth placed under the microscope proved it to be round-celled sarcoma.—(*Ib. and Annual Report.*)

NATURALLY DIGESTED FOOD FOR YOUNG PUPPIES [*V. de V. H. Woodley, L. C. V. D.*].—A quite interesting observation. After whelping her pups for about six weeks, and as they worried her constantly, the mother was taken away from them one night. After being fed she was returned to them in the morning, and after being with them some fifteen minutes she vomited her morning's feed in a semi-digested state. The pups ate it. She at times did the same thing in the evening. At first, thinking the vomiting was because she had swallowed something that did not agree with her, attempts were made to prevent this peculiar meal. She seemed so glad in attracting the pups round her and having such voluntary bringing up of the ingesta that the thing was allowed to go on, and the pups appeared to get accustomed to it, to expect it, and played about her mouth until she fed them. Taken away for a week from home, the bitch stopped vomiting; but when she returned she continued the thing awhile. The author has been informed of another similar occurrence by a large dog breeder.—(*Veter. Record.*)

UNTOWARD RESULT OF A HYPODERMIC INJECTION OF STRYCHNINE [*Duncan MacLeod, M. R. C. V. S.*].—An addition to similar cases already recorded. Bay saddle gelding was being treated for impaction. Good dose of chloral followed by seven drachms ball of aloetic mass. The next morning the pulse is

weak and irregular. There is complete absence of borborygms and paralysis of the bowels, which are stimulated by strychnine. A solution containing one grain is given subcutaneously. Five minutes later the animal is very restless; he has profuse salivation, and while a sedative drench is being prepared the horse breaks loose from the men that hold him, gets out into a yard, runs round several times, has violent muscular spasms and dies in a short period. Diaphragmatic hernia was found at the post mortem. Was the strychnine the essential cause of death is asked by the writer?—(*Ibidem.*)

BLACKLEGINE [*W. T. Huwvetson, M. R. C. V. S.*].—An answer to the pro and con opinions relating to its use. A client, says the author, wired me to attend his stock and requested me to bring setons. Surmising that there was trouble with blackleg quarter, I took some blacklegine with me. Four stirks had already died with the disease. I explained to my client that blacklegine was better than setons, telling him of my large experience in using it. The owner replied that he had read in newspaper clippings where some veterinary editors had published and where setons were advocated in preference to anything against black quarter. However, as I was favoring blacklegine, he allowed me to vaccinate thirty-seven gray cattle under the skin about half way up the tail. Four days later, summoned again, one of the vaccinated was found, having developed black quarter. Among the symptoms he showed considerable crepitation over an area behind the posterior edge of the scapula and extending down inside the elbow joint. Contrary to the desire of the owner, who wanted the animal killed, he was put under tonic treatment. The stirk did not die, but all the skin covering the area of crepitation had or was sloughing away, leaving a large wound, which was treated with Chinosol. The beast made a splendid recovery and the owner became satisfied that had it not been for the vaccination he would have died. Now for my client blacklegine is far superior to setons.—(*Veter. Record.*)

FRENCH REVIEW.

By Prof. A. LIAUTARD, M.D., V.M.

BUCCO-SINUSAL FISTULA IN A HORSE [*Prof. P. Leblanc*].—An animal, recently bought, had on the left side of the face,

upon the region of the inferior maxillary sinus, a fistulous opening, from which a foetid discharge escapes, mixed with food. A probe introduced penetrates into the sinus and, after some difficulty, enters the mouth through an opening situated between the external face of the dental arch on a level with the second and third molars and the internal face of the cheek. The animal was cast and trephined. That operation had evidently been performed before, as there are cicatrix showing it. The sinus was opened freely, its contents carefully removed and the walls of the fistulous tract well curetted. The wound and sinus were filled with gauze and wadding, and it was hoped that by this way the opening of the buccal cavity would close. The animal did well as far as the wound of the trephining went, but the communication between the mouth and the sinus did not seem to close. It is then that the author packed the bottom of the sinus with gutta percha, softened by dipping in warm water, and spread it over the bottom of the gingival groove so as to make it adhere to the borders of the opening. This did very well as the opening of the mouth gradually closed, and after one month the plug of gutta percha was still in the sinus, where it remained in place.—(*Journ. de Zootech.*)

FATAL VARICOSE ULCERATION IN A DOG [*Prof. G. Petit and R. Germain*].—Little is known of this disease of veins in animals. They are rather rare and *a fortiori* are varicose ulcerations. The history of this dog is short. Aged eight years, he had on the external face and near the superior part of the metatarsal a small tumor which is ulcerated. From this ulceration abundant hemorrhages have occurred frequently, and he died without treatment. At the post-mortem examination all the organs were found healthy and the histological study of the tumor revealed its true nature, an ulcerated varicose tumor.—(*Bullet. de la Soc. Cent.*)

OSSIFYING PACHYMEINGITIS OF THE TENTORIUM CEREBELLI IN A YOUNG DOG [*Mr. Lecarpentier, student*].—The dog was nine months old and presented the following symptoms: Carrying the head to one side at a point on a level with the axoido-atloid joint. The great and small oblique muscles of the head are atrophied, the posterior straight of the right side are hard and much contracted. The muscles of the left side are soft. The head is inclined, with the right ear lower than the left. The dog hesitates to walk; made to do it, he staggers and then moves in a circle, 'to the right or to the left. Sometimes he executes a sideway motion and then drops suddenly on his right side. The

cerebral functions do not seem diminished. Temperature and respiration are normal. The appetite is fair. After a few days paralysis sets in. Taken out of his kennel, he turns on himself round his longitudinal axis to the right. Soon trismus takes place. Death occurred after 12 days of sickness. The lesions were entirely localized on the meninges of the cerebellum. The cerebro-cerebellous crests are continued by a bony production due to the ossification of the tentorium cerebelli and form a complete bony ring through which the encephalic isthmus passes. This bony septum is moulded on the anterior face of the cerebellum and is thick and round on its inferior border. The choroid plexuses were congested and the right inferior maxillary nerve was also pressed upon by the cerebro-cerebellous crests of the same side.—(*Journ. de Zootech.*)

COMMUNUTED FRACTURE OF THE GREAT SESAMOID AND OF THE POSTERO-SUPERIOR EXTREMITY OF THE FIRST PASTER WITH LUXATION BACKWARDS OF THE RIGHT FETLOCK [*Mr. Pecus, army veterin.*].—Ten-year-old mare, galloping, suddenly stops. She has dislocation of the right fore fetlock backwards. The principal metacarpal bone has pressed heavily on the sesamoid articular surfaces of the first phalanx, broke it and crushed the two large sesamoids in a great many pieces. The tendons of the perforatus and perforans are also extensively lacerated. The animal had been neurotomized some two and a half months before the accident.—(*Bullet. de la Soc. Cent.*)

HEMORRHAGIC LESIONS OF THE LIVER IN A DOG, SIMULATING ANGIOMAS [*Mr. Agliany, army veterin.*].—A St. Germain pointer, aged five, although having good appetite, is losing flesh and has a dull appearance and is weak. He carries marks of blisters on both sides of his chest and both hypochondriac regions are protruding outwards. His visible mucous membranes are pale, his pulse and respiration a little more frequent than normal. Percussion on both sides of the chest reveals dullness over the entire height of the thorax, in the posterior region and forward as far as the seventh or eighth rib. By auscultation the respiratory murmur is heard only in the anterior part of the thorax and not in the posterior, but in that part clear, loud borborygms are detected. Tuberculin test is negative. Submitted to a diet of milk, the dog seems to rally somewhat, but as soon as this mode of feeding is stopped relapse is manifest. Soon the symptoms become more marked and serious. The abdomen has become hard, somewhat painful; the hypochondriac regions are

more and more prominent, principally that of the right side, which is now deformed and has the aspect of a large hard mass. It is the liver hypertrophied. The animal always lays on the left side. After the series of the classical manifestations of hepatitis the dog dies. At the autopsy the liver is found enormous, pushing forward the diaphragm and reducing the size of the thoracic cavity. It weighed three kilogs four hundred and thirty grammes. It is bosselated by tumors uniformly situated on its surface and in its thickness. These are either of light red or of dark color, soft almost to fluctuation and varying in size from that of a hazel nut to that of the fist. In the left lobe there is one which is very large, and in the middle lobe there are two, quite large, and one of which has burst. The hepatic glands are infiltrated and congested. The gall bladder was full. The spleen had also 7 or 8 small tumors similar to those of the liver. The left lung was the seat of congestion by hypostasis. Heart normal. At first the tumors were considered as angiomas but the histological examination showed them to be simple hemorrhagic spots in the liver.—(*Rev. Gene. de Med. Vet.*)

STUDY ON HEART DISEASES OF THE HORSE: THREE SUDDEN DEATHS [*Mr. Morisot, army veterin.*].—Diseases of the heart are of physical and sometimes of moral order. The first of the three observations shows that in horses, as in man, normal causes have sometimes strong repercussion on the heart.

1. **OBSERV.**—Mare ridden at a horse show. After going a certain distance she stops suddenly and refuses altogether to jump an obstacle. The rider insists and fights with her for about three minutes and finally gives it up and takes her to her box. When there the rider loses his temper and punishes the mare severely. Suddenly frightened, the mare is taken with violent trembling of the whole body, arrest of the heart brings on syncope with passive congestion of the lungs; the mare drops down and dies in three minutes. **POST MORTEM:** Great passive congestion of both lungs. Pericardium is the seat of old lesions with marked myocarditis.

2. **OBSERV.**—Sudden death of a 7-year-old horse after a gallop. **POST MORTEM:** Heart much hypertrophied with increased size of its cavities. It weighed 6 kilogs. 30 grammes. Lesions of endocarditis. Tricuspid and mitral have fibrous vegetations and do not close completely the auriculo-ventricular openings.

3. **OBSERV.**—Seventeen-year-old horse found dead in his stall. Endocardium diseased. Mitral and sigmoid valves swollen and

covered with granulations. These were more marked in the right ventricle.—(*Ibid. and R. G. de Med. Vete.*)

INTOXICATION BY COLCHICUM [*Mr. A. Pirlot*].—A cow is taken sick while at pasture. She lays in sterno-abdominal decubitus with her head bent towards the shoulder. The pulse is quick, respiration rather accelerated, temperature normal. Rumination has stopped. There is slight tympanitis. The hind quarters do not react when pricked with pins. The animal is unwilling to rise. Rectal exploration reveals a distended rumen and the presence of a foetus, the cow was pregnant and in her fourth month. On inquiry it is found that the animal has taken her last meal in a field where colchicum grows freely. To this the ailment is attributed.

TREATMENT.—10 centigrammes of aqueous solution of nitrate of pilocarpine are given subcutaneously. Result, abundant salivation and ejection of blackish diarrhœic fœces. Strongly alcoholized coffee is prescribed next and mucilaginous enemas. Improvement was manifested the next day, and in ten more the animal was in her usual health. Five months later she gave birth to a very small calf and her placenta had to be taken away from her. In two previous years she had calves of very good size and the placentas came off rapidly. Can the condition of the last calving be attributed to the intoxication by the colchicum?—(*Revue veterin.*)

HUNGARIAN EXTRACTS.

By Prof. A. LIAUTARD, M.D., V.M.

PRESSURE UPON THE RECTUM BY THE HORNS OF THE UTERUS [*Doct. Marek*].—A mare had slight colic and complete arrest of defecation. Rectal examination revealed that the terminal end of the rectum was empty and at the entrance of the pelvis, the hand feels a strong resistance and finds the cavity of the rectum so reduced that only one finger can be pushed into it. Beyond this the intestine is felt much distended with fœces. The

portion of the rectum thus closed corresponds to the part where it is situated between the uterine horns and it is them that squeezes the rectum between the uterus and the pelvic curvature of the large colon which is dilated with gas. Digital exploration shows that the strangulated part is covered with clots of blood. A few fœces were expelled after irrigations, and in repeating them at last the contracted part could be entered with the fingers and the dilated portion of the organ being pulled backwards was readily allowed to empty itself. Complete recovery took place gradually.—(*Allatov. Lap. and R. G. de M. Veter.*)

INTERESTING CASE OF GLANDERS OF THE MAMMAE [*By the same.*].—In a mare presenting typical symptoms of glanders there were on the skin of the extremities and on the sides of the trunk either painful nodules or glanderous ulcerations, some of which are as large as a dollar piece. Round these the lymphatic vessels form cords as thick as two fingers. The left half of the udder appears swollen and has an ulceration about the size of a fifty-cent piece, from which escapes freely yellowish pus mixed with blood. The supra-mammary glands are swollen and painful. The colt of the mare, two months old, had nasal glanders. The post mortem shows lesions of nasal glanders in both animals and besides of pulmonary in the mother. In the diseased mammae there was on the right side a cavity filled with pus and milk. The supra mammary glands contained no glanderous elements. The author believes that the colt had nasal glanders, inoculated through the diseased udder.—(*Ibidem.*)

ACTINOMYCOSIS OF THE LIVER WITH TRAUMATIC ORIGIN [*By the same.*].—After being slaughtered, a steer in good condition exhibited an enormous liver, weighing 72 kilogs. It was adherent to the rumen and had numerous deposits varying in size from that of a walnut to that of a child's head. At the point of adherence of the liver with the rumen there was a tumor as big as the fist, with a track in its centre. A piece of wire was imbedded in this canal. A probe pushed in the canal penetrated in the liver. The small nodules of the liver were hard, gray, white when cut through, and have little soft clusters. The largest contain thick pus. The little soft centres contain actinomycetes, but these were absent in the large nodules. There was no actinomycotic lesions anywhere else and the case was considered as one of primitive disease of the liver, the parasites having found admission through the presence of the piece of wire.—(*Ibidem.*)

GERMAN REVIEW.

By J. P. O'LEARY, V. M. D., Bureau of Animal Industry, Buffalo, N. Y.

KERATITIS ENZOOTICA IN CATTLE [*Fumagalli*].—Fumagalli saw cattle affected with a keratitis which was transmitted to other cattle and even to sheep and dogs by means of the ocular secretions. In the latter animals the disease was of a mild type and readily curable. In the human subject the malady produced a painful conjunctivitis which was also amenable to treatment in a short space of time. Cows suffered severely, while oxen and bulls were attacked but very slightly, so that they seemed almost immune. The author had not observed the disease in calves, although they stood in the same stables with the infected cows. The first symptoms were those of pruritis and photophobia and almost constant rubbing; the eyelids closing gradually, the conjunctiva becoming hyperæmic and its blood vessels intensely injected. After the lapse of from 12 to 48 hours a severe lachrymation set in and the eyelids were continuously held closed, while the pain subsided somewhat. The cornea was blueish white and opaque. As a rule recovery ensued in from 7 to 15 days. In rare cases the author saw spots remaining on the cornea or ulcerations, and even in a few instances resulting in blindness. Treatment included solutions of sulphate of zinc, with an addition of tincture of opium. The spots upon the cornea were treated with calomel or powdered sugar. As a prophylactic measure Fumagalli recommends the immediate separation of the healthy from the infected animals, as also an energetic disinfection and destruction of the flies, as the latter are the carriers of the infection to other animals.—(*Deutsche Tier, Wochenschrift*, No. 13, 1909.)

FIBROLYSIN [*Vet. Train, Baruth in M.*].—Fibrolysin is an aqueous solution of a double salt composed of one molecule of thiosinnamin and half a molecule of sodium salicylicum. This preparation is put up for the trade by Merck in Darmstadt in sterilized solution (11.5 ccm=1 gramme of thiosinnamin). The three cases cited by the author established proof for the utility of the remedy. It brings about a regressive change in the well-known chronic connective tissue growths. The first case was that of a phlegmon of the thigh, accompanied with cutaneous sclerosis. This condition resisted a four-weeks' treatment with various salves. After

a second injection (subcutaneous) of 11.5 ccm. of the remedy in an interval of four days, almost complete recovery ensued. The second case was that of an ox, as a result of extreme hard work a non-inflammatory, painless, hard, flat swelling about the size of a soup plate formed on the left shoulder. Similarly, after two subcutaneous injections (the last one made in the centre of the neoformation), it almost completely disappeared. As a result of an injury to the hock joint and fetlock joint of a horse a cutaneous sclerosis formed which likewise disappeared after two subcutaneous injections of the remedy. On the basis of these results the author believes that he can recommend the use of fibrolysin in all cases.—(*B. T. W.*, 1909, No. 14.)

FIBROLYSIN IN THE TREATMENT OF CHRONIC TENDONITIS AND TENDOVAGINITIS IN TWO HORSES [*Vet. W. Gottschalk, Schessel, Han.*].—Gottschalk used fibrolysin (that prepared by Merck of Darmstadt) in treating a 14-year-old horse which was no longer serviceable on account of a chronic tendinitis and tendovaginitis with the result that the animal, after 6 injections (subcut.) in the affected limb, at the end of 14 days, was again put to work. The second case was that of a 9-year-old horse which had received 3 subcutaneous injections in the diseased leg and on account of the extreme irritability received 3 more subcutaneous injections in the neck. After 20 days this horse also became serviceable. Gottschalk recommends that the animals so treated be allowed to rest one day in the stall after injection.—(*Deutsche Tier Wochen*, No. 35, 1908.)

FILARIA FLEXUOSA IN DEER.—During the months from January to March a large number of deer died from an extremely chronic disease in the heaths of Rominter. The animals became very much emaciated, presented symptoms of weakness in the sacral region, with staggering gait, finally lying down and dying shortly afterward. At the autopsy the following conditions were observed: Emaciation, lungs normal, isolated distomum in the liver. In the kidneys the larva of the oestrus were visible. In the subcutaneous connective tissues, particularly along the dorsal region, a large number, about 100, nodules, varying in size from a pea to a bean, were found and containing numbers of filaria flexuosa 3-5 c. m. long and $\frac{3}{4}$ mm. thick. The dura mater cerebri appeared normal, the pia mater very vascular, as also the pia spinalis. The cauda equina contained numerous hemorrhages, atrophy of the gray matter of the cord, particularly in the lumbar region. The white substance was stained yellowish and softened.

Whether the filaria were the cause of death has not been as yet established.—(*Veroff aus d preuss, Jahr, Vet. Berichten*, 1905, II.

AN ABNORMAL PERIOD OF GESTATION IN CATTLE [*Chapellier*.],—Chapellier performed three obstetrical operations on cows which were of an extraordinary nature as regards the abnormal period of gestation. All three animals were served by the bull at only one particular time, so that there could be no question as to the date of conception. The period of gestation in each of the three cows was 316, 311 and 309 days, respectively.—(*Deutsche Tier Wochen*, No. 9, 1909.)

COLLARGOL AN IDEAL DUSTING POWDER FOR WOUNDS [*Vet. J. Ruegg, Andelfingen*.].—The author applies as a dusting powder on wounds the preparation Collargol (Credé, Dresden) in combination with sugar of milk in the following proportions: Collargol 3 parts, finely powdered sugar of milk 97 parts. This mixture is much cheaper than iodoform. It remains dry and retains its finely powdered condition throughout. According to Ruegg's observations its action is equally effective upon old infected wounds as on more recent ones.—(*Schweizer Archiv für Tierheilk*, Bd. 50, S. 29.)

SCARLET FEVER IN MILK.—Forty-three cases of scarlet fever, attributable to impure milk, have been quarantined in Westminster, England. The milk was part of a quantity collected by a West of England wholesale firm from thirty-one farms and distributed to retailers in London.

When the source of infection was discovered, the whole of the milk supply from the farm was prohibited by the medical officer from being sold until a clean bill of health could be given.—*New York World*, Sunday, July 25, 1909.

ONE of the largest importations of hackney horses ever brought over from England has just been made by Rosuliet O'Neill, of Vancouver, B. C. The collection embraces nineteen mares and the stallions Forest Fire, by Forest Star, son of Forest King, and Brilliant of Cangue, by Lincoln Baronet, son of Garton Duke of Connaught. The Canadian Northwest is at present outstripping every other section of North America in its importations of hackney horses. There, as in the East, the English harness horses have been winning the lion's share of the prizes in the show ring, which has given them the call among breeders and buyers.—*New York Herald*, Sunday, July 25, 1909.

CORRESPONDENCE.

PROGRAM TO DATE: A. V. M. A.

HARTFORD, CONN., July 17, 1909.

Editors AMERICAN VETERINARY REVIEW, New York City, N. Y.

GENTLEMEN—Replying to your request of recent date, I am enclosing the following for the REVIEW:

In the June issue of your journal I promised to supply the readers of the REVIEW with a preliminary outline of arrangements for the Chicago meeting. As there will be no further opportunity for the fulfillment of such a pledge, I trust that you will find it convenient to spread the following on the pages of the August number.

The local Committee on Arrangements have selected the Palmer House, corner of State and Monroe streets, for headquarters. This hotel, in the very midst of the shopping and business districts is so situated that all parts of the city and the railroad stations are accessible with comparative ease. The rates offered by the Palmer House are: Single rooms, without bath, one person, \$1.50-\$2.00 per day and up; two persons, \$2.00 and \$3.00 per day and up; with bath, one person, \$2.50, \$3.00, \$3.50 and \$4.00 per day; two persons, room with bath, \$3.50, \$4.00, \$4.50 and \$5.00 per day; three persons in a room, \$1.00 a day extra. This hotel is European plan.

Other hotels within a few minutes' walk of the meeting place are: The Kaiserhof Hotel, 262-274 Clark street, \$1.00 per day and up; with bath, \$2.00 per day and up.

The Great Northern Hotel, corner Jackson boulevard and Dearborn street, one person, \$1.50 per day and up, without bath; two persons, \$2.50 per day and up; room with bath, one person, \$2.50 per day and up; two persons, \$4.00 per day and up. They offer some very large rooms accommodating four persons at \$8.00 per day, without bath.

The Stratford Hotel, corner Jackson and Michigan boulevards, rooms with shower bath, \$2.50 per day and up; two in room with shower bath, \$3.50; single rooms with tub bath, \$3.50 per day and up; two in room \$4.00 per day and up.

The Auditorium Hotel, corner Michigan boulevard and Congress street. One person, without bath, \$2.50 per day and up; one person with bath, \$3.50 per day and up.

PLACE OF MEETINGS.

The convention will open Tuesday, September 7, at 10 a. m., at the auditorium of the Chicago Musical College, located on the lake front, 246 Michigan boulevard. This is within a few minutes' walk of the Palmer House and other hotels in the down town district.

The regular sessions will be:

Tuesday, September 7—10 to 12 a. m., 2 to 5 p. m.

Wednesday, September 8—10 to 12 a. m., 2 to 5 and 8 to 10 p. m.

Thursday, September 9—10 to 12 a. m., 2 p. m. to adjournment.

Friday, September 10—9 to 12 a. m., 2 to 4 p. m. Clinic.

PRELIMINARY MEETINGS.

Monday, September 6, 11 a. m.—Executive Committee, Parlor "O," Palmer House.

Monday, September 6, noon—Local Committee on Arrangements, Palmer House.

Monday, September 6, 4 p. m.—Association of College Faculties and Examining Boards, South Dining Room, Palmer House.

Monday, September 6, 8 p. m.—Meetings of regular and special committees, Palmer House.

Tuesday, September 7, 8 a. m.—Executive Committee, Parlor "O," Palmer House.

EXERCISES OF THE CONVENTION.

10 a. m.—Convention opened by President Rutherford at Chicago Musical College.

Address of welcome, Hon. Fred A. Busse, Mayor of Chicago.

Response to address of welcome, (a member of the association).

Address by President Rutherford.

Recognition and welcome to delegates from other veterinary organizations.

Roll call.

Submission of the minutes of the previous meeting as presented in the annual report published by the Publication Committee and in the records kept by Secretary Lyman.

Unfinished business.

12 noon—Adjournment for luncheon.

2 p. m.—Association reassembles.

Report of the Executive Committee.

Admission of new members.

Reports of regular committees.

Committee on Intelligence and Education.

Committee on Diseases.

The committee will submit a short general report and special reports from the individual members as follows:

(a) "Diagnosis of Rabies, Its Spread and Methods of Control in New York State," V. A. Moore, Chairman, Ithaca, N. Y.

(b) "The Nature, Cause and Prevalence of Rabies," J. R. Mohler, Washington, D. C.

(c) "Rabies in Canada," Charles H. Higgins, Ottawa, Canada.

(d) "Equine Pernicious Anæmia," A. T. Kinsley, Kansas City, Mo.

(e) "Infectious Diseases from the Meat Inspectors' Point of View," L. Enos Day, Chicago, Ill.

Committee on Legislation.

Committee on Finance.

Committee on Publication.

Committee on Local Arrangements.

Committee on Necrology.

Committee on Resolutions.

Reports of Special Committees.

Committee on Association Seal.

Committee on Revision of Article VI., Section 2, of the By-Laws.

Committee on Visitation to Laval University, Veterinary Department.

Report of Secretary Lyman.

Report of Treasurer White.

Reports of Resident Secretaries.

Discussion of Reports.

Election of Officers.

5 p. m.—Adjournment.

- 8 p. m.—Reception in the parlors of the Palmer House, to which all members, visiting veterinarians, delegates and ladies and friends are cordially invited.

Wednesday, September 8, Second Day.

- 8 a. m.—Executive Committee meeting.
10 a. m.—Association reassembles.
 Reports of committees.
 Unfinished business.
 Reading and discussion of papers.
12 noon—Adjournment.
2 p. m.—Association reassembles.
 Reading and discussion of papers continued.
5 p. m.—Adjournment.
8 p. m.—Joint Session of the American Veterinary Medical Association and the Chicago Medical Society, Chicago Musical College.
 Discussion of problems in relation to milk and milk hygiene.
 “Milk in Relation to the Live Stock Interests,” M. H. Reynolds, St. Paul, Minn.
 “Milk in Relation to Health,” W. A. Evans, M.D., Commissioner of Health, Chicago.
 “The Relation of the Agriculturists and Dairymen to the Manufacture of Hygienic Milk,” N. Kaumanns, Imperial German Commissioner for Agriculture to the United States, Chicago.
10 p. m.—Adjournment.

Thursday, September 9, Third Day.

- 8 a. m.—Meeting of the Executive Committee.
10 a. m.—Association reassembles.
 Reports of committees.
 Unfinished business.
 Reading and discussion of papers continued.
Noon—Adjournment to reassemble aboard the steamboat United States.
2 p. m.—Association reassembles. Steamboat United States program continued.

Friday, September 10, Fourth Day.

- 9 a. m.—Clinic at the Chicago Veterinary College, 2533-2539 State street.

Noon—Luncheon will be served at the college.

1.30 p. m.—Clinic continued.

Exhibit of Pathological Specimens by the Bureau of Animal Industry.

At the Clinic there will be demonstrated a number of surgical operations and cases for clinical diagnosis by well-known veterinarians.

SOCIAL FEATURES OF CONVENTION WEEK.

The local committee furnish the following preliminary outline of entertainment for members, their families, visitors and friends:

Tuesday, September 7.

10 a. m.—Visitors and friends are invited to attend the opening exercises of the convention at the Chicago Musical College.

1 p. m.—Ladies will be served with luncheon at the Art Institute.

8 p. m.—Reception in the parlors of the Palmer House. To this all members, visiting veterinarians, delegates, their ladies and friends are cordially invited.

Wednesday, September 8.

Ladies will assemble at the Palmer House to participate in an automobile ride through the city parks and boulevards. Luncheon will be served to the ladies at the Chicago Veterinary College, after which they will be conducted on a trip through the shopping districts.

Thursday, September 9.

10 a. m.—Ladies will be entertained by the local committee.

1.30 p. m.—Members, visiting veterinarians, delegates, their families and friends will go aboard the beautiful new steamship United States, boarding at Clark Street Bridge, for a sail occupying the balance of the afternoon on Lake Michigan. The saloon of the boat is capable of seating comfortably five hundred persons, and it is proposed to continue, if necessary, the regular program of the meeting.

8 p. m.—Annual banquet to be held in the Gold Room, Congress Hotel, Michigan boulevard and Congress street. All invited and a great time promised.

Friday, September 10.

The ladies will be conducted to a sight-seeing trip through the Field Columbian Museum.

Among the papers that will be presented at the meeting we have the following:

"Exuberant Granulations in the Horse," B. F. Kaupp, Colorado State College, Fort Collins, Colo.

"The Score Card in Dairy Regulations," George H. Glover, Colorado State College, Fort Collins, Colo.

"Alkalometry, Its Relation to Veterinary Medicine," H. F. Palmer, Chicago, Ill.

"Autogenic Vaccination as an Adjunct to the Operative Treatment of Quittor, Fistula and Other Suppurative Conditions," R. A. Archibald, Oakland, California.

"Nervous Influence in Cause and Cure of Disease," E. A. A. Grange, Ontario Veterinary College, Toronto, Canada.

"What the Agriculturist and Veterinarian Means to the Health and Prosperity of the Nation," W. G. Hollingsworth, Utica, N. Y.

"Subcutaneous Abscess of the Foot," George H. Berns, Brooklyn, N. Y.

"Contagious Abortion," A. T. Peters, Lincoln, Neb.

"Internal Secretions," F. Torrance, Winnipeg, Man., Can.

"Pneumonia and Its Treatment," Mark White, Denver, Colo.

"Experience with Bier's Hyperæmic Treatment," H. Jensen, Kansas City Veterinary College, Kansas City, Mo.

"Diphtheria of Animals and Man," C. C. Lyford, Minneapolis, Minn.

"Trypanosomes and Diseases Caused by Them," Maximilian Herzog, M. D., Chicago Veterinary College, Chicago.

"Bovine Tuberculosis Investigations," C. M. Haring, W. A. Sayer and D. N. Morgan, Berkeley, Cal.

"A Fatal Anemic Disease Among Horses," Winfred F. Mack, Veterinarian, University of Nevada, Reno.

"Conservation of Natural Resources," Wm. Herbert Lowe, Paterson, N. J.

Beside the above papers and contributors, it is anticipated that others will be announced in the official program of the meeting which will in a short time be prepared for distribution.

RICHARD P. LYMAN, Secretary.

TRANSPORTATION NOTES.

Parties planning to attend the meeting and starting from points within the territory of either the Central Passenger Association or of Western Passenger Association, viz., the territory west and north of Chicago to the Mississippi River, from Kansas City, St. Louis, Peoria and Burlington, north of the Ohio River and east as far as Pittsburg and Buffalo, are advised that the regular fares or Summer Tourist fares from places within these territories to Chicago afford approximately a fare of two cents per mile or even less in some instances in each direction; this amounts to practically the same schedule of fares (fare and one-third) previously conceded as a reduced rate for the occasion.

The Southwestern Excursion Bureau announce that there are on sale daily up to September 30, 1909, and limited to October 31, 1909, Summer Tourist fares equivalent to approximately a two cent per mile round trip rate.

The Trans-Continental Passenger Association offer Nine Month Tourist fares which are in effect daily from the Pacific Coast points; these fares approximate two cents per mile in each direction (equivalent to fare and one-third round trip), and can be obtained from California and Northern Pacific Coast common points, viz., Bellingham, Seattle, Everett, Spokane and Tacoma, Washington, from Portland, Oregon, from New Westminster, Vancouver and Victoria, British Columbia, direct to Chicago. Should those contemplating attendance apply at stations on the Pacific Coast from which the nine month fare is not in effect, which may be the case at very small, unimportant stations, the local agent at such a place will cheerfully ascertain and advise such parties of the nearest point to this station from which such fare does apply both going and return, to which place a local daily rate ticket may be purchased. Tickets for the reduced nine month tourist fares are sold only in California, Nevada, Oregon, Washington and west of and including Mission Junction, British Columbia; also from Nelson, Rossland, Sandon, Kaslo and Grand Fork, British Columbia, places known as Kootenay common points.

Other passenger associations have not found it convenient to give reduced schedule rates for the meeting dates, but in this connection it should be remembered that reduced fares throughout almost the entire continent places the present passenger traffic rates nearly equal that formerly obtained by the reduced rate of fare and one third.

Editors AMERICAN VETERINARY REVIEW, NEW YORK:

GENTLEMEN—Having read a great deal recently by various authors in numerous veterinary magazines as well as in your highly valued REVIEW, of different methods and suggestions whereby the standard of our profession may be raised, I beg space in your valuable pages for publication of a few conclusions which I have finally arrived at after a great deal of deliberate forethought, and which may or may not have the desired influence over certain veterinary colleges.

Most authors recommend rigid state board examinations, which no doubt, are quite proper, but to which I take some exception. My opinions are:

1st. I consider those desirous of raising our standard have started at the wrong end, *i. e.*, instead of enforcing graduates of any college to face a state board examination, it should be regulated by a standard government matriculation.

2d. That the board of matriculant examiners should be composed of qualified men selected from all states, but having headquarters, say, at Washington, D. C.

3d. That no veterinary college should be chartered with the privilege of holding its own matriculation.

4th. Intending matriculants should be informed to apply to the official examining board for information regarding qualification dates, and places where such examination would be held.

5th. In the event of applicants passing such official examination, they should be provided with a certificate entitling them to entrance to any veterinary college in the United States that they may choose, without further examination.

My reasons for making these humble suggestions are well founded by experience; not merely personal, but of several others with whom I have come in contact. For instance, some veterinary colleges state in their curriculum that a matriculation will be necessary, for which a fee of five dollars (\$5) will be charged.

Needless to say, the fee is always collected, but the examination is more often a farce and consists in simply signing your name on the register and paying your money without any further parley.

The reason for this is quite clear to a great many veterinarians.

If one college turns down a prospective student he would simply take a walk and enter another college where they would

receive him with open arms. Thus the first college has lost in the vicinity of three hundred dollars (\$300) providing he puts in three years and graduates.

As the majority of veterinary students are poorly educated, and as they are attending in such large numbers, and in many instances being kicked through, it is no wonder the laity have such little respect for the average vet. and are becoming acquainted with the fact that most veterinary colleges are simply large diploma mills.

It seems a pity that so many qualified veterinarians have secured a charter and are using it as a purely mercenary proposition, and have long ago forgotten the fact that it is "quality" that counts and not the despised, unqualified "quantity."

The very men who should be instrumental in elevation of our standard are seemingly stamping it under their feet and making piles of money by doing so.

It is not uncommon to meet graduated veterinarians in various occupations, such as teamsters, stable bosses, hotel and saloon proprietors who of course are always accosted as "Doc" by their crude friends. No wonder that a few who have, and are still endeavoring to bring our chosen profession to a level with the M. D., are driven to desperation and are tempted to lower methods of making a livelihood, such as proprietary medicines, stock foods, etc., and abandon all attempts to raise our noble profession. That some society may be formed with intelligent, honorable gentlemen as leaders is the dream of every decent veterinarian, and that the object of its existence will be to abolish all such grafting diploma mills to which I have reference.

Trusting you will favor me with the valuable space I have requested, and begging forgiveness for writing such a long letter on which much more could be said, I have the honor to remain,

Sincerely yours,

DR. H. S. CAWSEY,
(Box 281) Regina, Sask., Can.

PROVIDENCE, R. I., July 13, 1909.

To the Editors of the AMERICAN VETERINARY REVIEW:

DEAR SIRs—Will you kindly publish the following information in the columns of your very valuable book, the AMERICAN

VETERINARY REVIEW, to protect the veterinary surgeons who subscribe for this book from an impostor who represents himself as Capt. A. L. Picquet, veterinary surgeon. I enclose his card.

CAPT. A. L. PICQUET, R.

F. N. C. V. S.

VETERINARY SURGEON

Formerly in U. S. Service

Graduate from France's National School of
Veterinary Surgery

Registered or Licensed in Eleven States.

References—U. S. Army, French Cavalry,
Egyptian Cavalry

He came to the stable where I have my office on Thursday evening, June 17, and told me of his travels through France and other parts of Europe, Asia and Africa, also all over the United States and particularly the southern states, and giving Galveston, Tex., as his home, and also having a very large practice there. He also represents himself as authority on tuberculosis in the cattle and swine.

He remained here until June 22, and on that date I was compelled to go away on business and he accompanied me to the train. After I had gone he went directly back to the stable and told the stable foreman he would like my instruments to go over to Pawtucket to do some work. And the foreman, contrary to my instructions, unlocked the room where I kept my instruments and allowed him to take them without an order from me. So, consequently, I am out of \$42 worth of instruments and the roll which the instruments were carried in, as that person has not been seen or heard from since.

And also on the date of June 22, he went to one of our prominent veterinarians, Dr. J. T. Cunningham, of 12 and 14 Garden street, and borrowed some other instruments, of which I shall give a list later, and promised him to return them by twelve o'clock that noon. But those are also gone with mine, as the missing parts of my set were borrowed at Dr. Cunningham's to fill out his load of stolen goods, which were all as good as new,

with the exception of a Haussmann and Dunn molar cutter, which has seen a lot of wear and but very little care, and the handles to correspond with cutters.

The following is the list of instruments taken, manufactured by the Detroit Instrument Co., Detroit, Mich.:

1 curette, 1 open molar cutter, 1 molar forcep, 1 large root forcep, 1 small 13-inch root forcep, 1 splinter forcep, 1 trephine forcep, 1 tooth drill, 1 sounding hook, 1 abscess lance, 1 dental or bone saw, 1 leather roll, chamois lined, color yellow.

Dr. J. T. Cunningham's instruments:

1 pair of Detroit handles, also 1 pair of Haussmann and Dunn handles.

I will now endeavor to give you a description of this person. He is a man about fifty years of age and stands about 5 feet 4 or 5 inches in height, and had a very heavy moustache and chin whiskers, sprinkled with grey; cheeks smoothly shaven. He wore a black derby hat, a brown and black suit of clothes with the brown stripe most prominent, and black shoes, and spoke with a marked French accent; appearance not very neat.

Hoping this information will be of use, I beg to remain,

Respectfully yours,

E. W. VAN VRANKEN,

227 Dean Street, Providence, R. I.

BACK in Pennsylvania they have a Jersey bull that goes to harness, and hitched to a sulky is reported to trot a mile in 2.40 and under the saddle is claimed to go even faster.

He is to be exhibited at some of the leading fairs this season as a special attraction.

Dan Patch has at last gotten a rival and the bull, Robert Patch, is out for a division of honors.—*Horn and Hoof*, June, 1909.

BEFORE the era of the Brahmin bull in Texas, the Lone Star State cattleman prided himself on his longhorns—in fact the longer the horns could be grown the greater was his pride. Meat didn't count! He reached the acme of his glory when one longhorn grew horns which measured as follows: From tip to tip, 7 feet 4 inches, by following the horns, 9 feet 7 inches, and 15½ inches in circumference close to the head. Since the advent of the Brahmin or Sacred Bull of India, the Texas cattleman is finding meat more profitable than horns.—*New York World*, Sunday, July 25, 1909.

SOCIETY MEETINGS.

NEW YORK STATE VETERINARY MEDICAL SOCIETY.

The twentieth annual meeting will be called to order at 10 a. m. sharp Wednesday, August 25, in the amphitheater of the New York State Veterinary College, Ithaca. After the address of welcome by Hon. Randolph Horton, Mayor of Ithaca, responded to by Prof. James Law, of the society, and the reading of minutes, and president's address, the regular routine of business, committee's reports, etc., will be disposed of with as much expedition as possible, and the reading of papers will begin. Up to date of this writing, July 20, Secretary De Vine and Chairman Fish of the local committee have the following to offer:

"Experiences with Foot and Mouth Disease," J. L. Wilder, Akron, N. Y.

"Some Remarks on Venereal Disease in Cattle," J. G. Wills, Chateaugay, N. Y.

"Laboratory Demonstrations of Interest to Practitioners," W. J. Taylor, Ithaca, N. Y.

"Origin and Development of the Dairy Cow" (Illustrated), H. H. Wing, President of the State Dairymen's Association.

A bench luncheon and smoker at 9 p. m. will conclude the first day's session.

At 9.30 a. m. on the morning of the second day, August 26, the program will be continued as follows:

"Anemia in the Horse," W. B. Mack, Reno, Nev. (By invitation.)

"Types of Horses," F. C. Grenside, New York City.

"Certified Milk," Mrs. C. H. Cocke, New York City.

"Cerebro-spinal Meningitis in the Horse," H. J. Milks, Owego, N. Y. (By invitation.)

"Making Market Milk Under Veterinary Inspection," Claude D. Morris, Binghamton, N. Y.

"Light and Ventilation," D. H. Udall, Ithaca, N. Y. (By invitation.)

"A Practitioner's Experience with Echinacea," D. D. Le Fevre, Newark, N. Y.

"The Veterinarian of To-day and What He Advocates," W. G. Hollingworth, Utica, N. Y.

"Eserine," J. H. Taylor, Henrietta, N. Y. (By invitation.)

Adjournment at 6 p. m.

8 p. m.—Banquet. The evening to be devoted to a discussion of rabies. A paper will be presented upon "The Control and Extent of Rabies in New York State," by J. F. De Vine, Goshen, N. Y.

The third day, Friday, August 27, will be devoted exclusively to a clinic at the New York State Veterinary College Hospital, where the members and visitors are requested to assemble at 10 a. m. There will be a number of cases for diagnosis and surgical operation. The list is not complete, and therefore cannot be published at this time, but the following subjects are already promised: Cryptorchid, roaring, hematuria, spaying of different species of animals, etc.

Suitable entertainment will be provided for the ladies, and they are cordially invited to attend.

Society Headquarters, New Ithaca Hotel. European and American plans.

MISSOURI VALLEY VETERINARY ASSOCIATION.

The fifteenth annual meeting of the Missouri Valley Veterinary Association convened in Omaha June 16 and 17, 1909. It was the most successful meeting of this association ever held in the northern part of the Middle West, both in point of attendance and number of names added to the membership role. About seventy-five veterinarians were in attendance.

THE BUSINESS MEETING.—The board of censors favorably passed upon the names of 84 applicants, all of whom were duly vouched for by members, and they were duly elected to membership.

The following officers were elected for the ensuing year:

A. T. Kinsley, President; W. H. Tuck, First Vice-President; L. U. Shipley, Second Vice-President; B. F. Kaupp, Secretary-Treasurer. C. E. Stewart, R. Ebbitt, R. F. Bourne, E. Biart, C. R. Walters, Board of Censors.

The following committees were created at this meeting and appointments made by the president-elect as follows:

Infectious Diseases—G. H. Glover, Chairman; D. F. Luckey, P. Juckiness, H. E. Bemis, L. L. Lewis.

Therapeutics—H. Jensen, Chairman; D. C. Scott, H. E. Kingman, H. B. Treman, H. Bradley.

Surgery—J. S. Anderson, Chairman; H. McConnell, R. R. Dykstra, C. E. Steel, G. J. Collins.

Food Inspection—D. M. Campbell, Chairman; F. Jellen, Meat; L. Champlain, Dairy; C. P. Liegerot, Hygiene; O. E. Troy.

Necrology—S. Stewart, Chairman; G. B. Young, J. I. Gibson.

It was moved, seconded and carried to revise the constitution and by-laws and the president empowered to appoint said committee.

Committee on Revision of the Constitution and By-Laws—H. Jensen, Chairman; H. C. Simpson, A. T. Peters.

The board of censors made a report of the auditing of the accounts of the secretary-treasurer. This report showed \$196.00 in the treasury. The report was accepted.

The censors then made the following report: Recommended that the name of Dr. J. Vincent be dropped from the membership roll because of his not abiding to the professional ethics of this association. It is further recommended that the secretary of this association notify Dr. J. Vincent, of Shenandoah, Iowa, of this action by registered letter. This recommendation was accepted and adopted.

The secretary then read a letter from Dr. R. P. Lyman, Secretary of the American Veterinary Medical Association, requesting the appointment of a delegation to its annual meeting which will convene in Chicago September next.

It was moved, seconded and carried that the president appoint a committee of five to represent this association at that meeting.

Delegates to the A. V. M. A.—S. H. Johnson, Iowa; D. M. Campbell, Kansas; L. A. DeCow, Nebraska; E. Biart, Kansas; H. McConnell, Missouri.

It was moved, seconded and carried that a committee be appointed to write a suitable memoriam to the late Dr. Sidney L. Hunter, and that as the president, Dr. J. I. Gibson, had been a classmate of the deceased, that he be included in this committee. The president appointed on this committee Dr. S. Stewart, Dr. Hal. C. Simpson and Dr. B. F. Kaupp.

NECROLOGY REPORT.—Whereas, Death has removed from among us on February 27, 1909, Dr. Sidney L. Hunter, a much-beloved member of the Missouri Valley Veterinary Association; a member who was instrumental in the formation of the association; one who gave his earnest and whole-souled support by attending its meetings whenever possible, by serving the association as its first secretary and in all other capacities whenever called upon to do so, be it therefore

Resolved, That he has set a standard as a member, a citizen and a Christian gentleman which will serve as an inspiration to each of us, and in striving to emulate him we can reflect great credit upon our profession; and be it further

Resolved, That this association express to his family our high appreciation of Dr. Hunter's life and work and our sincere sympathy in their bereavement.

J. I. GIBSON,
S. STEWART,
HAL C. SIMPSON,
B. F. KAUPP,
Committee.

The president appointed Dr. E. Biart, of Leavenworth, Kansas, to convey the typewritten copy to the bereaved family, who live in that same city. The secretary-treasurer then read his annual report.

A communication was then read from Dr. J. H. McNeil, of Columbus, Ohio, who was formerly at Ames, Iowa, and who desired to sever his connections with the association on account of the great distances from the meeting places. It was moved, seconded and carried that the resignation be accepted and that Dr. J. H. McNeil be made an honorary member of the association, on account of his previous active services in the association.

THE PAPERS.—The following program was carried out. Many of the papers brought out lengthy discussions. "Extra Uterine Pregnancy," Dr. E. Biart; "The Cardiac Mechanism and How It Is Influenced by Drugs," Dr. R. F. Bourne; "The Score Card System of Dairies," Dr. Geo. H. Glover; "Rupture of the Oesophagus," Dr. B. H. Merchant; "Cathartics in Veterinary Practice," Dr. D. M. Campbell; "Poisoning in Horses from Ensilage," Dr. L. C. Beaumont; "Equine Pneumonia," Dr. C. L. Barnes; "Hemorrhage Following Castration," Dr. Wirt R. Barnard.

THE BANQUET.—The annual banquet was held in the Banquet Hall of Hanson's Cafe at 8 o'clock P. M.

THE TOASTS.—Dr. S. Stewart, Toastmaster. "Setting the Hen," Dr. A. T. Peters; Song, Dr. J. I. Gibson; "Sera and Vaccines," Dr. A. T. Kinsley; Discussion, Dr. H. Jensen; State Boards, Dr. J. S. Anderson.

THE CLINIC.—The clinic was held at the hospital of Dr. D. C. Scott, 2810 Mason street. Eleven cases in all were presented.

A black mare affected with high ring bone on both fore limbs was presented and double median neurectomy was performed.

A fibroma at the point of the shoulder as a result of an improperly fitted collar was removed from a black gelding by Dr. Haxby.

A bitch was presented for oophorectomy. The H. M. C. anæsthetic was used and the operation performed by Dr. D. M. Campbell.

A pig with prolapsus of the rectum and a sow with hernia were also presented.

The clinic occupied the entire afternoon.

The association adjourned to meet in Kansas City, February, 1910.

B. F. KAUPP,
Secretary.

MAINE VETERINARY MEDICAL ASSOCIATION— SECRETARY'S REPORT.*

Once a year business methods require all firms, corporations or business houses to take account of stock, to balance the cash book, and find out the result of the past year.

As secretary of this association, I wish to make a "resumé" of our work during this last year, or rather of what we have attempted to achieve.

Six interesting papers have been read and five new members have been admitted, making a total membership of 40. I have collected \$113.92, which sum has been remitted to the treasurer. Sixteen delinquents can be found owing from \$5 to \$28 each.

* Presented to the M. V. M. A., at Augusta, Jan. 13, 1909.

Two applications for membership have been rejected during the year. Two very important resolutions were adopted, and the proper authorities were notified, viz.: The association condemned the application of a second test on tuberculous cattle having shown a typical reaction on the first examination. Second, the requirement of a certificate of tuberculin test with cattle for exhibition at our state fair was also recommended. Nothing has been done; the authorities have not even seen fit to answer your secretary.

At this present time, through the efforts of this association, a committee appointed by the State Board of Health, is studying the ways and means to improve our method of dealing with bovine tuberculosis. Let us hope that it will accomplish some good.

From proper sources I am informed that 21 non-graduates or quacks have been doing veterinary work for the Cattle Commission during this last year and have been paid by the state for their services. One of our Cattle Commissioners has tested himself over 500 head, and the Cattle Commissioner has employed agents to do veterinary work who are not even registered by the State Board of Veterinary Examiners.

Some time ago the *Lewiston Journal*, during the excitement in the City of Lewiston caused by the condition of their milk supply, suggested that the milk inspection should be done by state authority, insinuating that local veterinarians could not be trusted.

In presence of these few facts, I am asking myself many questions. How long are we going to stand it? Has the time arrived for the veterinary profession of Maine to be heard? Are we united as a body? Are we competent as business men and confident of ourselves as veterinarians to raise our voice, to inform the public of Maine, what should be done? It seems to me that it is our duty, as good citizens, to do so, when all over the world people of all classes are interested in these great questions of sanitary measures, and mostly this dreadful tuberculosis. Something ought to be done. Some new legislation is needed.

Our milk inspection laws are misleading and should be amended. We have no meat inspection for what we consume, while federal laws require an inspection for meat shipped out of the state.

The Cattle Commission is appointed by the governor as laymen to look after the business interest of their department and not to enter into veterinary practice.

Our veterinary bill enacted in 1905 has not been very satisfactory, neither to the public nor to the veterinary profession, and I can assure you that the members of the Board had all they could do to prevent its repeal; and let us hope, when we are stronger and more appreciated by the public, the veterinary bill will be improved.

Before closing, I wish to call your attention upon another matter which I think will interest you. It is in regard to accident insurance. I have never carried any accident policy until this year. For many years I have argued with several agents that the veterinarian was not properly classed. As you are aware, the profession is classed with firemen, railroad employees, hack drivers, brewery distillers, etc. I always maintained that a graduate veterinarian should be classed with the country physician. So I have at last succeeded to have the Portland Casualty Co. to accept us as first-class risk, and have them to differentiate the graduate veterinarian with the non-graduate.

During the year I have had correspondence with the members of this association. To those who have answered promptly I wish to thank them, and those who never reply to a letter, I feel sometimes like saying, "Go back to school."

A. JOLY, Secretary and Treasurer.

VETERINARY MEDICAL ASSOCIATION OF NEW YORK CITY.

At the June meeting of the Veterinary Medical Association of New York City held in the lecture room of the New York American Veterinary College, New York City, Dr. W. Reid Blair, Veterinarian and Pathologist of the New York Zoological Society, gave a talk on the "Diseases of Wild Animals in Captivity."

The doctor's remarks were illustrated by sixty-five lantern slides showing methods of control and operations on various wild animals in the New York Zoological Park. Among the slides shown were operations on the elephants, rhinoceroses, alligators, bears, wild-cats, baboons, monkeys, deer, antelopes, ostriches and various other wild species.

A number of slides were also shown illustrating various pathological conditions affecting wild animals in captivity. Dr. Blair's remarks were as follows:

The New York Zoological Society was the first to establish, on a permanent basis, a medical department in connection with a Zoological Park. The objects of this department are to extend our knowledge of the care and health of wild animals in captivity; to find the causes of various diseases and the means which should be taken for their prevention and cure, as may be determined by systematic observation and record, and by experimental treatment.

This, besides being humane, is part of an economic administration. An animal properly housed, and well cared for, also needs scientific medical attention, because all animals in close confinement are peculiarly liable to certain kinds of diseases.

We are especially fortunate in having on the Executive Committee of the Zoological Society thoroughly scientific men, who appreciate the value of scientific research in comparative medicine and pathology, and who are determined to take the utmost advantage of the scientific opportunities which this large collection of animals affords for discoveries which would be of importance not only to the animals, but to man.

It is proposed to collect all observations of the members of the medical staff of the Park, as well as of the curators, and to publish them in book form, as a comprehensive work on the care and treatment of wild animals in captivity; a work which is very much needed, for it is a surprising fact that no such book showing the experience gained from Zoological Park management has ever been published.

One fact which has greatly impressed me in the study of the diseases of wild animals is that, in order to obtain the best results, the statistical method should be used to a great extent. By this method we would gradually arrive, more or less unconsciously perhaps, at a special system of pathology and therapeutics peculiarly adapted to the diseases of wild animals in confinement.

The collection of a large number of cases, with careful analysis of recorded data, can but yield valuable conclusions.

Post-mortem examinations are systematically made on all animals dying in the Park. We find that these necropsies can be made without injury to the carcass for the taxidermist or for museum purposes, while at the same time facts of the greatest scientific importance are constantly being discovered. Since a considerable number of animals die without showing any symptoms of disease during life, it would be impossible to intelligently ascribe the cause of death without these examinations.

The records of these examinations are carefully filed, and it is needless to say that we possess a collection of pathological data, bearing on the diseases of wild animals in captivity of the greatest value, both practically and scientifically. The increased knowledge and experience in the prevention and treatment of diseases and the careful system of quarantine provided for new animals before placing them on exhibition, has resulted in a constantly declining death rate. Two years ago Dr. P. Chalmers Mitchell, Secretary of the London Zoological Gardens, visited several of our American Zoos, and was impressed by the work of the medical department in connection with several of them, and on his return to London, his first official act was the establishment of a Medical Department in connection with the Garden. In the first year of the Department's existence, deaths from tuberculosis alone were reduced from 35.8 per cent. to 21 per cent., and during the past year an even greater reduction has been made. In the last Annual Report of the Zoological Society of Philadelphia the following appears: "It is gratifying to observe that under the preventive measures which have been developed since the opening of the Laboratory of Pathology, the relative mortality from tubercular diseases in the Gardens has been reduced to a point below that of human records of this city." I mention these facts in order to show just what has actually been accomplished by scientific methods. Since 1902 tubercular diseases among the animals in the New York Zoological Park have played a very unimportant part in the death rate. This is due (1) to the careful selection of animals purchased; (2) the hygienic buildings in which they are quartered; (3) the rigorous exclusion of all animals known or suspected to be tubercular from the cages of the uninfected; and (4) the immediate isolation of any animal upon the first signs of disease, the cages being washed and thoroughly disinfected after the removal of such animals, and before healthy ones are placed in these compartments.

Our experience soon taught us that in order to successfully combat the introduction of diseases to the Park, especially those of a contagious nature, a most complete and efficient quarantine system was absolutely necessary. Too great faith cannot be placed in port inspection for the detection of contagious diseases in wild animals. It is practically impossible for any inspector to detect disease in a latent form, or to discover whether apparently healthy animals have been in contact with those which were unhealthy. Moreover, it is a practical impossibility to obtain

even a good view of an animal when it is crated for a long journey, and the first place in which real inspection is possible is the quarantine quarters. The introduction to the New York Zoological Park of a small ferret suffering from distemper was the source of a severe epidemic of this disease among wolves, coyotes and foxes, with a loss of over 90 per cent. of the infected animals. So it will be seen that a grave form of disease may be introduced and communicated by apparently mild or trivial cases.

The value of the quarantine system has been many times demonstrated: for animals which have died within a few days of their arrival at the Park, upon autopsy have revealed a highly contagious disorder, which would no doubt have been very disastrous and far-reaching if introduced into cages of healthy animals. In some instances it has been found practicable to place newly-arrived animals on exhibition at once in isolated corrals or cages, but an animal is never placed in an enclosure or cage with healthy ones until we are reasonably sure that the new arrival is perfectly healthy. Disinfection as a preventive of disease plays an important part in the medical work of the Park. The frequent systematic and thorough disinfection of buildings, corrals, dens and cages, whether there have been contagious diseases or not, has, in my opinion, been a great factor in keeping the Park free from anything like an epidemic.

MICHIGAN STATE VETERINARY MEDICAL ASSOCIATION.

ADDRESS OF PRESIDENT T. G. DUFF.

To the Officers and Members of the Michigan State Veterinary Medical Association:

GENTLEMEN—We are now assembled for the twenty-seventh time in annual convention for the purpose of exchanging ideas as to the best way of advancing the interests of the veterinary profession in Michigan. As far as my address is concerned, it will be very brief, just a few suggestions as they have come to me.

As far as diseases in a general way are concerned, there has been very little change in the territory that I have covered.

The outbreak of foot and mouth disease and other contagious outbreaks will be fully covered by the report of committee on diseases.

Our secretary and treasurer, Dr. J. Black, has informed me that he will not be a candidate for renomination, a fact which I very much regret, and in case we cannot prevail on him to accept the office again, I would suggest that great care be exercised in choosing his successor, as much of the strength and prosperity of the organization depends on that officer.

I think the office of treasurer should go to another individual, as the present constitution was adopted when our association was small. As the organization grows, the advisability of this, in my mind, becomes more important, and I would suggest that the treasurer be required to furnish bonds, as a matter of precedent if nothing more. Again, it would make one more active officer who would feel the responsibility of the success of our association.

I would suggest that a delegate be elected by our association to attend the meeting of the A. V. M. A., and this association should assist in defraying his expenses. We have much difficulty in procuring a direct report of the proceedings of that important annual gathering and this step would insure that for us.

Another important matter is some method of prosecuting illegal practitioners. This matter should receive careful consideration, and I am glad that Dr. Gohn, who has had much experience along legislative lines, has consented to open the discussion.

I think the time is ripe for referring the nomination of officers to the hands of the executive committee, as we all know it is very easy to make mistakes in the election of our officers. I would recommend that this method be tried this coming election.

Evidently our plans for a summer meeting will be compelled to lay over another year, as the next meeting of the A. V. M. A. will be held in Chicago in September next, and any of our members who would attend a summer meeting of our association, would be more than pleased of this opportunity to attend our American gathering.

Death has again alarmed our outer door, and taken from us two of our much esteemed members in the persons of Dr. A. E. McBeth, of Battle Creek, who died on August 21 of apoplexy,

and Dr. W. F. Carr, of Bay City, who was killed by the accidental discharge of a gun in a lumber camp up north. I trust our committee on resolutions, who will be appointed later, will draft suitable resolutions.

I trust that we will have a very enjoyable and profitable meeting.

REPORT OF COMMITTEE ON DISEASES.

Your committee on disease beg to report that there has been something doing this past year in dealing with some contagious and infectious diseases. The disease which has attracted most attention, and particularly so on account of radical measures taken by the United States Government and the co-operation of the State Live Stock Sanitary Commission, is foot-and-mouth disease.

Another disease quite prevalent in certain parts of this state, and which should claim the attention of the veterinary practitioner is hog cholera. This disease seems to be on the increase. It is often met with on post-mortem inspection at the abattoirs. Prof. Marshall's discussion of this disease will give you much valuable information, and impress upon you the necessity of giving some attention to its existence. Should some practitioner ask what to look for on post mortem, would say besides the appearance of the internal organs, notice the hemorrhagic condition of the lymphatic glands of the carcass, the skin lesions, the petechial spots of the kidney, and the dark or black appearance of the bones, especially of the vertebræ on cross section. One or several of these lesions may be present.

The disease contagious abortion, present to some extent, will be discussed by a co-worker of Prof. Marshall.

Besides these diseases, more or less of the following are present in the state: Influenza, strangles, glanders, rabies, sheep-scab, tuberculosis. Then, in the western part of the state, what is known as the Lake Shore disease in cattle, though not proved to be infectious. In the northern part of the state the summer disease of horses seems to be present every year.

Rabies in cattle in Berrin County and Cass County have been reported to have occurred according to the report of the State Live Stock Sanitary Commission. And in dogs, numerous cases have occurred in different parts of the state.

Glanders is one of the diseases that makes its appearance occasionally. The State Live Stock Sanitary Commission re-

ports five horses destroyed in 1908, and there have been a few besides that, I think; so it would be safe to say that there have been seven or eight cases during the year. And the disease has occurred in different parts of the state. It shows that a watchful eye is necessary for the veterinary practitioner, and he ought not to leave a suspicious case go without the mallein test.

Sheep-scab is said to have been present in the Thumb District in the eastern part of the state. Not any cases known to exist at the present time.

One more disease needs our consideration, last but not least, as it is the most prevalent disease in Michigan as well as in other states. The disease, tuberculosis, is one some practitioners never get bothered with, though they treat those very animals having it for other ailments.

In the report of the A. V. M. A. of 1908, it is noticeable that the Committee on Diseases spent nearly all its time and energy, as far as making a report goes, to glean facts on the disease, tuberculosis. This has induced me to write about this disease again. It is the one disease we notice on post-mortem in the packing houses, but as I have given the post-mortem conditions met with in previous reports I shall not endeavor to burden you with any details this time, as the conditions met with and number of cases are about the same, with possibly a slight increase.

In the report of the A. M. V. A., Dr. J. R. Mohler, Chief of the pathological division of the B. of A. I., relates some interesting experiments in the way of communicability from man to animal and animal to man. He speaks of the experiment of the Royal British Commission: "A cow was injected with human tubercle bacilli under the shoulders, and began excreting tubercle bacilli from the mammary glands in seven days, and continued to do so until its death from generalized tuberculosis thirty days after inoculation." Dr. Mohler also speaks of experiments in Germany where meat from cattle that had localized tuberculosis was fed to animals, and it did not produce tuberculosis in those animals. But meat fed to cattle that were condemned, having generalized tuberculosis, produced the disease.

Possibly most of you have read the article by Dr. M. H. Reynolds, on the control of tuberculosis, addressed before the International Congress of Tuberculosis at Washington; you will notice how immense an undertaking it would be to eradicate tuberculosis in Michigan. It would cost millions of dollars. If

with a few million dollars the disease could be eradicated, I think it would be well worth the money at that. According to his figures, it would take all of the registered graduated veterinarians in Michigan all their time all the year round to test cattle and could not test them all then. And one test is not enough; several tests are necessary. The way the disease is communicable from man to animals would in some cases require another test. And cases which are latent and do not react the first time would react at a second test.

Thirteen states are now enforcing laws regarding entrance of tuberculous cattle. They require the tuberculin test or certificate that the cattle have been tested before being regularly admitted to the state.

There is an interstate law in the United States now that cattle known to be tuberculous cannot be moved from one state to another.

Every veterinary practitioner should acquaint himself with the method of testing cattle for tuberculosis; it is likely Michigan will before long have some law in regard to testing cattle, and if not, there will be individual farmers and dairymen who are progressive enough to have their herds tested anyway. Some methods of testing are not correct, such, for example, as were conducted in Grand Rapids last fall by veterinary students. If the instructions are followed which accompany the tuberculin, the test will be all right, but when the temperature is only taken four times after injection of the tuberculin and the last only sixteen or eighteen hours after injection, the test is not reliable. To see that the right amount of tuberculin is injected and done right is an important factor. The reason so much opposition has been raised against testing with tuberculin is because the wrong methods have been used. It is also very important that the veterinarian should know what to look for on post-mortem examination, as the disease is sometimes confined to one gland, one of the cervical, hepatic, bronchial, or mediastinal glands, and those will have to be incised with the knife to see it. As fowls and all kinds of birds are subject to the disease, a knowledge of the lesion of the disease post-mortem may come handy even in a kitchen post-mortem.

Dr. O. E. Dyson, of Chicago, has an article on tuberculosis in his report on diseases for the A. V. M. A., which, though not giving facts and figures about the disease, is a most interesting article. He does some grand reasoning, and such arguments as

are brought to the reader's mind cannot help but instil in him the desire to join in the battle for eradication of the disease.

Respectfully submitted,

Z. VELDHUIS,
Port Huron, Mich.

THE OHIO SOCIETY OF COMPARATIVE MEDICINE.

August 25 and 26, Upper Sandusky, O.

PROGRAM.

Wednesday, August 25.

Paper, "Meat and Milk Inspection," J. F. Planz, V. S., Akron, O.; C. H. Case, V. S., Akron, O.

Paper, "The Veterinarian on Boards of Health," A. S. Cooley, V. S., Cleveland, O.

Discussion of both papers, opened by T. Clark Miller, M. D., Massillon, O.

Lecture, "The Use of a Modification of the Wright-Douglass Vaccines in the Treatment of Animal Diseases," J. McL. Phillips, M. D., Columbus, O.

Discussion, opened by W. J. Stone, M. D., Toledo, O.

Reception, 5 to 7 p. m. Banquet at 8 p. m.

Thursday, August 26.

8 a. m.—Observation of Tuberculin Test—Bovine. Post-mortem of Tuberculosis—Bovine—as per diagnosis of above test. Committee: C. B. Frederick, V. S., Canton, O.; T. Clark Miller, M. D., Massillon, O.; A. E. Follet, M. D., Granville, O.; R. J. Morgan, M. D., Van Wert, O.; W. E. Clémens, V. S., Granville, O.

1.30 p. m.—Lecture "The Relation of Bovine Tuberculosis to Man," David Steward White, V. S., Columbus, O.

Discussion, opened by Lewis A. Levison, M. D., Toledo, O., and T. Clark Miller, M. D., Massillon, O.

7.30 p. m.—Lecture, "Serum Therapy, or The Practical Application of Bacteriology in the Cure of Disease," Ezra Read Larned, M. D., Detroit, Mich.

Discussion, opened by R. C. Longfellow, M. D., Toledo, O.

GENESEE VALLEY VETERINARY MEDICAL ASSOCIATION.

The twelfth annual meeting of the Genesee Valley Veterinary Medical Association was held at Rochester on Thursday, July 8, 1909. Twenty-four members were present.

A very interesting clinic was held at Dr. A. George Tegg's infirmary, commencing at 11 a. m. and lasting until 5 p. m. The meeting then adjourned to the Rochester Club, where a dinner was given by the association. At the meeting after dinner, action was taken toward establishing an associate membership, giving all the privileges of the association, excepting voting or holding office, this membership being open to all properly qualified men living *outside* of our territory.

The next meeting of the association will be held in Rochester the second week in January.

J. H. TAYLOR, Secretary.

KING EDWARD'S MINORU won the Derby, the classic turf event of England, on May 26. The American entry, Sir Martin, was the betting favorite, but fell soon after the start and lost his chance.

TWELVE thousand dollars was recently paid at public auction for the imported Jersey bull Viola's Golden Jolly. This is the highest price ever paid for a Jersey bull at auction.—*Hoof and Horn*, July, 1907.

A MILK VENDER.—There is a hygienic slot machine which furnishes hot or cold milk to the school children of Germany. One slot furnishes paper cups which are thrown away after being used. When the coin is placed in the slot, the milk tap protrudes from the box, and when a lever is released it disappears again to be rinsed by a device which cleans it thoroughly. When hot milk is desired, an indicator is moved over the "warm" mark, and enough milk to fill one of the cups leaves the tank and runs over a flat surface under which a spirit lamp is burning. The lamp lights when the indicator is moved. As is usually the case in Germany, the sanitary regulations are fulfilled to the letter. Once a day the milk tank and its connections are taken out and cleansed thoroughly.—*Popular Mechanics*.

NEWS AND ITEMS.

MELBOURNE UNIVERSITY VETERINARY SCHOOL COMMEMORATION DINNER.

A dinner to commemorate the establishment of a Veterinary School at the Melbourne University was held on Tuesday, March 30, 1909, at the Cafe Francais, Melbourne.

The Chancellor of the University, Sir John Madden, K. C. M. G. (Chief Justice of Victoria), was in the chair, and amongst those present were the Vice-Chancellor (Sir Henry Wrixon, K. C. M. G.), the Minister for Agriculture (The Hon. Geo. Graham), the Lord Mayor of Melbourne (Lieut.-Colonel J. Burston), the Director of Agriculture (Dr. Cherry), Professor Spencer (Biology), Professor Elkington (History), Professor Osborne (Physiology), Professor Berry (Anatomy), the Chairman of the Board of Health (Dr. W. Perrin Norris), Professor Gilruth (Veterinary, Pathology), the President of the Veterinary Board of Victoria (Mr. S. S. Cameron, M. R. C. V. S.), Dr. J. W. Barrett, Mr. W. T. Kendall, M. R. C. V. S. (late Principal of the Melbourne Veterinary College), Sir Henry Weedon, the Hon. George Swinburne and the Hon. J. E. Mackey.

The Loyal Toast having been honored, Dr. J. W. Barrett proposed the toast of the founders of the Melbourne University Veterinary School. He said that a few years ago the university did not cater for properly training the men who would have to conduct the industries of the country. During the past seven years, however, they had established Schools of Agriculture, Education, Mining and Engineering and had made proper provision for the training of dentists and chemists. The last, and in some respects the greatest step, was the establishment of a School of Veterinary Medicine in connection with the University. The late government took the initiative and the present government loyally accepted their predecessors' bill, with the result that the measure had become law and the Veterinary School an established fact. Thanks were due to Mr. Swinburne, Mr. Mackey, Sir Thomas Bent, and the present ministry for their cordial assistance and also the city council for so promptly granting four acres of valuable land, right in the heart of the city

and adjoining the University grounds as a site for the Veterinary School buildings and Research Laboratory.

Professor Baldwin Spencer in supporting the toast, said he must confess that universities had, up to recent times, been rather the home of conservatism. He thought that in Melbourne that stage had now been passed and the one aim was to make the University the seat of every kind of learning that would be of assistance to the public and the nation. A School of Agriculture two years ago and now one of Veterinary Science were perhaps the most useful developments in recent times, and we had to thank the members, not only of this government, but of the previous government also for the keen interest they had shown in these matters. It was to the very kind feeling of the city council, together with the generous support shown by the Minister for Agriculture that we had had handed over to us a site for this Veterinary School.

The Hon. Geo. Graham, Minister for Agriculture, in responding, said that he had done but a small part in bringing the Veterinary School into existence. It was true that, with the help of a sympathetic house he had managed to get the bill passed through parliament, but in this case the whole of the credit was due to Mr. Swinburne, Sir Thomas Bent and Mr. Mackey. He was satisfied that but for these gentlemen there would have been no Veterinary School to-day. We should not forget what our old friend, Mr. Kendall, had done for the school. He established a Veterinary College in Melbourne and many of his students were now filling very important positions in this and other countries. He did not know how Mr. Swinburne had secured the services of Mr. Gilruth as Professor and Dean of the Veterinary Faculty, but was satisfied that we had the right man in the right place. Sir Henry Weedon had taken an active part in negotiating for the gift of four acres of land in close proximity to the University by the city council. The present government would be only too pleased to do all in its power to assist the faculty and Professor Gilruth in bringing the institution to a successful issue.

The Lord Mayor said that the city council and parliament were both very sympathetic in regard to the establishment of the Veterinary School. The proposal had received the support, not only of the city interests, but of the country as a whole. He was delighted to know of the recent development of the University of Melbourne for at this time of day it was more particularly on practical lines that the University should extend. The city

council was fully alive to the necessity of developing the meat trade, both home and export, and of securing a good and wholesome supply. In this and other respects the council was endeavoring to raise the standard of the food supply. For that end other reasons the founding of this Veterinary School in connection with the University was a step the citizens were never likely to repent of. The present occasion was a unique one in the annals of Australia, and in years to come when the Veterinary School had developed, it would be regarded as one of the historic events in the career of the Melbourne University. If there was found to be insufficient room in the four acres, and it was necessary to secure another paddock, no doubt the city council would be able to do something in the matter. With our large increase of trade and continuously expanding cattle markets, it was of very great interest and value to the State that we should have a body of men ready to take the lead in improving the meat supply and in showing both producers and retailers how they could place the trade on the best, most healthy and satisfactory condition.

Hon. Geo. Swinburne, in responding, said he wished to acknowledge the good work accomplished by Professors Berry and Osborne, Mr. S. S. Cameron and Mr. Kendall. He said they had been three years trying to get the school established. He referred to Mr. Kendall's efforts as being worthy of the very highest appreciation and was glad they had been able to secure the services of Professor Gilruth. He thanked Mr. Graham and the present ministry for endorsing the grant of £10,000 and the annual endowment of £4,000.

The Chancellor (Sir John Madden), in proposing the toast of Mr. Kendall, said he would ask them to drink the health of one whom he might well call the Father of Veterinary Science in Victoria. He had always known him as an admirable citizen and an honorable and worthy man. He would remind those present that he was the first to undertake the responsibility, with the attendant sneers and scoffs, drawbacks and discouragements, of establishing a Veterinary College in Victoria. He had started a private hospital in Melbourne and associated with it a Veterinary College. The result was that he had passed through his college 136 students, of whom 60 had gone out as well equipped and well-taught graduates. Finally he had now handed over to the University 24 students from his own college. The University was very glad, as also were his students and friends, that not

only did his college come over to the University and also his pupils, but because, in addition, he himself was to be the lecturer on Veterinary Medicine at the new Veterinary School. He felt sure that Professor Gilruth and Mr. Kendall would do credit to themselves and to the institution to which they had become attached. The Minister for Agriculture had said that someone had stolen Professor Gilruth from New Zealand, but it did not matter if you were found in the possession of stolen goods so long as you did not know they were stolen. It was not surprising that when universities were first established, they were nothing if not conservative. They were founded in anything but—favorable circumstances. It was owing to the tumult and disorder and bloodshed outside that people of philosophic, studious and peaceful dispositions gathered together in universities primarily that they might be able to follow their own bent without rude and forcible interruption. While they were developing their philosophies, they were in danger of being burnt at the stake for their adherence to philosophic principles. Therefore, universities in the beginning were very self-centered, conservative and precautionous of what they did, and thanking God every day that they were able to do anything. In these modern times when universities are able to take the bit in their teeth, they can carry as far as who cares the practical applications of science and art. We all heartily and fully appreciate Mr. Kendall's services, and he had great pleasure in presenting him with an inscribed address. Mr. Kendall had never hesitated to walk in the path of duty and had resisted every temptation to be turned aside from it. We were all anxious to present a "Dreadnought" to the British Empire, but if we could spare Mr. Kendall, he knew of no better "Dreadnought" that we could present than he.

(Sir John Madden then presented Mr. Kendall with an address and a life-size portrait in oils of himself, subscribed for by members of the veterinary profession to be hung within the new University Veterinary Building.)

Mr. W. T. Kendall, in responding, said he wished to express his sincere thanks and his appreciation for the handsome manner in which his services had been recognized. He could conceive of no other way of so doing which would have gratified him more. He regretted to say that some of those gentlemen who had assisted him had gone to that bourne whence no traveler returns; others had gone to various parts of the world. He acknowledged the very great assistance given to him by Mr.

Cameron during a very critical period. He was with him at the time when they had to fight for everything they got. It was largely due to his efforts that they had the University Veterinary School established to-day. As far as Professor Gilruth was concerned, he said that Wellington was not more pleased to see Blucher than he was to welcome Professor Gilruth to the Chair of Veterinary Pathology. We had now one of the best institutions in the world and the government would never regret having set aside the necessary money for the establishment and development of the University Veterinary School.

Sir Henry Wrixon (Vice-Chancellor of the University) proposed the health of the incumbent of the Chair of Veterinary Pathology and Dean of the Faculty of Veterinary Science in the Melbourne University (Professor Gilruth). He said Professor Gilruth did not come to us as a stranger. He brought to us a career which was well known all over the world. He had made a name in Europe, and we all know how he was prized in New Zealand. We would gladly welcome him here as a man wanted at this particularly hour. We had in him a man who united a thorough knowledge of the science he taught with a knowledge of the man to whom he taught it. There was a deep feeling in many of the people that we ought to utilize all our science and teaching and intelligence in order that it might be made easier for every man to do the developmental work of this country with better prospects for himself. We could not have a better man to further this end than Professor Gilruth. (The toast was cordially honored.)

Professor Gilruth, in responding to the toast of his health, said that one of the chief reasons that decided him to take up the onerous duties to which he was called by the University of Melbourne and the government of Victoria, was that this work opened up a great field for research and investigational work. He had been much impressed since his arrival with the enthusiasm shown with regard to this movement. He had never in his life been associated with a proposal to which so many people devoted their enthusiastic and energetic support without—so far as he was aware—a single individual having an axe to grind. In this respect the inauguration of the Melbourne University Veterinary School was almost unique. The late and the present governments had acted with the utmost courtesy and consideration, and had enthusiastically supported the whole scheme. The University authorities, although it had been clearly stipulated

that no money voted to the Veterinary School could be converted into other University channels, had done all in their power to assist.

Then again the city council came forward with a gift of land valued at about £20,000 and handed it over to a University over which they had no control. The public had also shown their appreciation in a practical manner.

A scholarship of £100 had been donated by Sir Richard Cooper, a resident of England, and another one had been established by Mr. Payne of this city. Gold and silver medals have been donated by the Hon. Geo. Graham, the Hon. Geo. Swinburne and others, and he was glad to see that substantial encouragement had been offered for the carrying out of Veterinary Research work. He was pleased to be associated with Mr. Kendall, and trusted that the establishment of the Veterinary School would be fraught with great benefit to the whole of the community. He felt justly proud to have had the position of Director of the new school and laboratory conferred upon him, and it would be his utmost endeavor to make the institution a pronounced success. (The toast of "The Chancellor" brought the evening to a close.)

NINTH INTERNATIONAL VETERINARY CONGRESS AT THE HAGUE, September 13-19, 1909.—The Executive Committee kindly begs you to insert the following information in your periodical:

The preparation of the congress is in full swing, and more than eight hundred participants from all parts of the world have had themselves inscribed as members, whilst many official delegates have been appointed.

Out of more than 140 persons who promised to give reports about the subjects, previously mentioned, over 100 have proved true to their word. A few of the other reporters have obtained, for well-founded reasons, prolongation of the term of sending in their reports. The others are regarded as having foregone their wish of reporting upon some subject, now that the term of sending in their papers has expired.

The committee has already begun to dispatch the printed reports, to those who have had themselves inscribed as members, so that the members have already received a number of these reports.

The committee will endeavor to have the reports that came too late printed before the date of the congress. It will, how-

ever, be impossible to have the summaries translated likewise in all those cases.

The meetings of the congress, as well as the opening and closing sessions will be held at Scheveningen in the rooms of the Kurhaus and of the hotels of the "Exploitatie-Maatschappij Scheveningen." These rooms were already appointed for the purpose.

The Executive Committee has likewise arranged a plan for the festivities and ceremonies connected with the congress. The gala-banquet will take place on Thursday, the 16th of September, in the great concert hall of the Kurhaus. On Friday, the 17th of September, a gala-performance will be given in the Royal Theatre at The Hague. Further particulars will be communicated in the official program which will be published in a short time.

As concerns the excursions in the afternoon of Wednesday, the 15th of September, the celebrated harbors of Rotterdam will be visited, and after the expiration of the congress, consequently after the 18th of September the great excursions will begin. In the first place a visit will be paid to the town of Utrecht and its beautiful environs.

On Monday, the 20th of September, the inauguration of the monument in honor of the late Dr. Thomassen, who died in 1906, will take place at the Veterinary School of the State in Utrecht. Thereupon the excursionists will go to the Northern provinces of the Netherlands, where the most remarkable towns and districts will be visited, and in some places cattle and horse shows will be organized for the members of the congress. For those who wish to see another part of Holland, excursions to the province of Zeeland are planned. A preliminary program of the excursions will soon be sent to the members.

A committee of ladies has been formed, whilst a plan for occupying the ladies of the members in a pleasant manner during the sessions of the congress has been prepared.

All particulars concerning the congress will be communicated in a detailed circular which will be sent, in due time, to all the members, and which will likewise contain detailed descriptions of the towns and districts that are to be visited by the excursionists.

In the name of the Executive Committee:

D. A. de Jong, General Secretary,
Maresingel 20, Leyden (Holland).

Leyden, 1st July, 1909.

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VETERINARY MEDICAL ASSOCIATION MEETINGS.

In the accompanying table the data given is reported by many Secretaries as being of great value to their Associations, and it is to be regretted that some neglect to inform us of the dates and places of their meetings.

Secretaries are earnestly requested to see that their organizations are properly included in the following list :

Name of Organization.	Date of Next Meeting.	Place of Meeting.	Name and Address Secretary.
Alumni Ass'n, N. Y.-A. V. C.....	.....	141 W. 54th St. Chicago.....	L. L. Glynn, N. Y. City.
American V. M. Ass'n.....	Sept. 7-10, 1909.	.....	R. P. Lyman, Hartford, Conn.
Arkansas Veterinary Ass'n.....	.....	.....	Horace E. Rice, Little Rock.
Ass'n Médéciale Veterinaire Française "Laval".....	1st and 3d Thur. of each month	Lec. Room, Laval Un'y, Mon. Chicago.....	J. P. A. Houde, Montreal.
B. A. I. Vet. In. A., Chicago.....	2d Fri. ea. mo....	.....	D. D. Tierney, Chicago, Ill.
California State V. M. Ass'n.....	.....	San Francisco.	J. J. Hogarty, Oakland.
Central Canada V. Ass'n.....	.....	Ottawa.....	A. E. James, Ottawa.
Chicago Veterinary Society.....	2d Tues. ea. mo. June, 1909.....	Chicago.....	J. M. Parks, Chicago.
Colorado State V. M. Ass'n.....	.....	Denver.....	M. J. Woodliffe, Denver.
Connecticut V. M. Ass'n.....	.....	New Haven.....	B. K. Dow, Willimantic.
Genesee Valley V. M. Ass'n.....	2d wk. in Jan., '10.	Rochester.....	J. H. Taylor, Henrietta.
Georgia State V. M. A.....	Nov. 16-17, 1909.	Athens.....	P. F. Bahnsen, Americus.
Hamilton Co. (Ohio) V. A.....	.....	.....	Louis P. Cook, Cincinnati.
Illinois State V. M. Ass'n.....	.....	Bloomington..	J. H. Crawford, Harvard.
Illinois V. M. and Surg. A.....	Jan. and Aug. January, 1910....	Louisville.....	W. A. Swain, Mt. Pulaski.
Indiana Veterinary Association..	.....	Indianapolis..	E. M. Bronson, Indianapolis.
Iowa Veterinary Ass'n.....	.....	Ft. Dodge.....	H. C. Simpson, Denison.
Kansas State V. M. Ass'n.....	.....	Topeka.....	B. Rogers, Manhattan.
Kentucky V. M. Ass'n.....	.....	Not decided....	D. A. Piatt, Lexington.
Keystone V. M. Ass'n.....	Monthly.....	Philadelphia..	S. Lockett, Glenolden.
Louisiana State V. M. Ass'n.....	.....	.....	E. P. Flower, Baton Rouge.
Maine Vet. Med. Ass'n.....	.....	Portland.....	A. Joly, Waterville.
Maryland State Vet. Society.....	.....	Baltimore.....	H. H. Counselman, Sec'y.
Massachusetts Vet. Ass'n.....	Monthly.....	Boston.....	Wm. T. White, Newtonville.
Michigan State V. M. Ass'n.....	Jan. 25-26, 1910.	Saginaw.....	Judson Black, Richmond.
Minnesota State V. M. Ass'n.....	.....	Stillwater.....	G. Ed. Leech, Winona.
Mississippi State V. M. Ass'n.....	.....	.....	J. C. Robert, Agricultural Col.
Missouri Valley V. Ass'n.....	February, 1910..	Kansas City..	B. F. Kaupp, Fort Collins, Col.
Missouri Vet. Med. Ass'n.....	.....	St. Joseph.....	F. F. Brown, Kansas City.
Montana State V. M. A.....	.....	Helena.....	W. S. Swank, Miles City.
Nebraska V. M. Ass'n.....	.....	Grand Island..	H. Jensen, Weeping Water.
New York S. V. M. Soc'y.....	Aug. 25, 26, 27..	Ithaca.....	J. F. De Vine, Goshen.
North Carolina V. M. Ass'n.....	.....	Wilmington..	Adam Fisher, Charlotte.
North Dakota V. M. Ass'n.....	Call of Sec'y....	Fargo.....	C. H. Martin, Valley City.
Ohio State V. M. Ass'n.....	.....	Columbus.....	Sidney D. Myers, Wilmington.
Ohio Soc. of Comparative Med..	Annually.....	Up'r Sandusky	F. F. Sheets, Van Wert, Ohio.
Oklahoma V. M. Ass'n.....	.....	.....	W. H. Martin, El Reno.
Ontario Vet. Ass'n.....	.....	.....	C. H. Sweetapple, Toronto.
Passaic Co. V. M. Ass'n.....	Call of Chair... Sept.....	Paterson, N. J. Philadelphia..	H. K. Berry, Paterson, N. J.
Pennsylvania State V. M. A.....	.....	.....	F. H. Schneider, Philadelphia.
Philippine V. M. A.....	.....	.....	Chas. G. Thomson, Manila.
Province of Quebec V. M. A.....	.....	Mon. and Que. Providence...	Gustave Boyer, Rigaud, P. Q.
Rhode Island V. M. Ass'n.....	Jan. and June.. 1st Wed. fol. the 2d Sun. ea. mo.	.....	J. S. Pollard, Providence.
St. Louis Soc. of Vet. Inspectors.	.....	St. Louis.....	Wm. T. Conway, St. Louis, Mo.
Schuykill Valley V. M. A.....	.....	Reading.....	W. G. Huyett, Wernersville.
Soc. Vet. Alumni Univ. Penn.....	.....	Philadelphia..	B. T. Woodward, Wash'n. D. C.
South Dakota V. M. A.....	.....	Sioux Falls...	J. A. Graham, Sioux Falls.
Southern Auxiliary of California State V. M. Ass'n.....	Jan. Apl. Jy. Oct. 4th Tues. ea. mo. Call Exec. Com. 2d Thu. ea. mo. July.....	Los Angeles... 407 Ill. Ave... St. P.-Minneapolis..... Rutland.....	J. A. Edmonds, Los Angeles.
So. St. Joseph Ass'n of Vet. Insp.	.....	.....	H. R. Collins, So. St. Joseph.
Texas V. M. Ass'n.....	.....	.....	R. P. Marsteller, College Sta.
Twin City V. M. Ass'n.....	.....	.....	S. H. Ward, St. Paul, Minn.
Vermont Vet. Med. Ass'n.....	.....	.....	F. W. Chamberlain, Burlington.
Veterinary Ass'n of Alberta.....	.....	.....	C. H. H. Sweetapple, For. Saskatchewan, Alta., Can.
Vet. Ass'n Dist. of Columbia.....	3d Wed. ea. mo..	514-9th St., N. W.	M. Page Smith, Wash., D. C.
Vet. Ass'n of Manitoba.....	Not stated.....	Winnipeg.....	F. Torrance, Winnipeg.
Vet. Med. Ass'n of N. J.....	Jan. 13, 1910....	Jersey City... 141 W. 54th St. Jersey City...	W. Herbert Lowe, Paterson.
V. M. Ass'n, New York City.....	1st Wed. ea. mo. Monthly.....	.....	W. Reid Blair, N. Y. City.
Veterinary Practitioners' Club...	.....	Hampton.....	A. F. Mount, Jersey City.
Virginia State V. M. Ass'n.....	.....	.....	W. G. Chrisman, Charlo'sv'le.
Washington State Col. V. M. A.....	1st & 3d Fri. Eve.	Pullman.....	R. G. McAlister, Pullman.
Washington State V. M. A.....	.....	Seattle.....	J. T. Seely, Seattle.
Western Penn. V. M. Ass'n.....	1st Wed. ea. mo.	Pittsburgh...	F. Weitzell, Allegheny.
Wisconsin Soc. Vet. Grad.....	Grand Rapids.	J. P. West, Madison.
York Co. (Pa.) V. M. A.....	Sept. 7, 1909....	York, Pa.....	E. S. Bausticker, York, Pa.

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